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Twentieth President of the Southern Economic Association, 1948-1949

MALTHUS THE MALTHUSIAN *VS.*
MALTHUS THE ECONOMIST

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"Scriptural interpretation proceeds by the examination of Scripture, and inferring the intention of its authors ..."

B. de Spinoza, in *A Theologico-Political Treatise*, ch. 7.

It is the purpose of this paper to indicate that Malthus's policy recommendations respecting the Corn Laws and corn-pricing were based primarily upon his ever present apprehension regarding the longer-run demographic effects of low corn-prices, corn imports, etc. It may have been the hand of Malthus the economist that set down his views on these subjects, but it was the theory of Malthus the Malthusian that animated them. This point is usually overlooked by commentators.

I

As a point of departure use may be made of an interesting paper in which implications of Malthus's seeming but temporary subscription to a corn-wage welfare theory are examined.[1] Through proceeding to demonstrate that Malthus's adherence to this theory was temporary at best, an inference to which Professor Grampp apparently subscribes, we may establish a basis for the judgment that it was comparatively non-economic, demographic considerations that inspired his views concerning corn-price and corn-law policy.

For purposes of exposition, let W represent the worker's money wage for an appropriate period (say, a month or a year); C and M, the amount of corn and non-corn, respectively, consumed by the worker and his family in this period; p_c and p_m, the average price of C and M, respectively, such that $W = Cp_c + Mp_m$.[2] Furthermore, let n represent the number of persons per family,

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[1] See W. D. Grampp, "Malthus On Money Wages and Welfare," *American Economic Review*, 1956, XLVI, pp. 924-36.

[2] It is implied that no saving takes place except in so far as M includes net increments to the family's physical assets. Malthus supposed that, as a rule, a family's aggregate income F would exceed M, since some income was received by family-members other than the family-head receiving M. Moreover, F tended to be higher in real as well as in money terms when prices were sufficiently high or rising than when they were falling, since in the former situation more employment would be available, especially to family-members other than the main wage-earner; for then diminutions in the purchasing power of M would be more than offset by increases in $(F - M)$. E.g., see *The Principles of Political Economy*, 2nd. ed., 1836, pp. 231-34, 258-59; *An Essay on the Principle of Population* (6th ed., 1826), (London, 1890), pp. 426-27; also note 18 below. A similar argument appears in the 1st edition of the *Principles* (1820), pp. 288 ff. Much of the first edition is identical with, or similar to, the second. The major changes in the Essay were those made in the second and the fifth editions, many of

and q the amount of corn consumed per member, such that $nqp_c = Cp_c$; for then, given p_c , with the average size of family constant at n, a constant C implies a constant consumption of q corn per member.

Let us now suppose that W rises and falls at the same relative rate as p_c , with C and p_m remaining constant. Then if p_c rises by (say) half, W will increase by half, and, assuming no substitution of M for C, M will increase by half. The worker and his family will have experienced an increase in real income; the increase might be somewhat greater, if some M were substituted for C. Conversely, should p_c decline by half, C would remain constant, but W and M would decline by half; the worker and his family, therefore, would be worse off. This is the theorem attributed to Malthus; on this theorem is based the inference imputed to him that rising corn prices benefit the laborer, wehreas falling corn prices disadvantage him.[3]

II

Did Malthus really subscribe to the proposition that W rises and falls at the same relative rate as p_c ? We may examine his appriasal of earlier views; we may note specifically what he said at different times; we may ascertain how his views were understood; and we may inquire whether his conception of the money-wage adjustment process is compatible with the above proposition. We shall find that although Malthus gave expression to the theory on one occasion, he cannot be described as subscribing to it.

(i) While a number of eighteenth century writers believed the movement of money wages to depend principally if not wholly upon the movement of the prices of necessaries,[4] only some of the Physiocrats gave expression to the theorem under consideration. Quesnay observed that if, with a worker's wages at 130 livres per year, of which 100 is spent for grain and 30 for other things, the price of grain doubles, wages will rise to 260 livres per year, of which 200 will be spent for grain and 60 for other things, the prices of which presumably increase much

which in the second are indicated in *Additions to the Fourth And Former Editions of An Essay on the Principle of Population,* (London, 1817). These additions were incorporated in the fifth edition (1817), from which the sixth differed only slightly. See my "Malthus's Total Population Theory: A Restatement And Reappraisal," *Canadian Journal of Economics and Political Science,* 1945, XI, pp. 83–110, 24–64. Unless otherwise indicated my references are to the 2nd edition of the *Principles* and the 6th (1890) edition of the *Essay.*

[3] See Grampp, *op. cit.*, pp. 925–28. Grampp goes on to show that, if the movement of W is regulated by the movement of both p_c and p_k (where p_k is price of K, a substitute for C), the worker's welfare will increase either if p_c increases relatively more than p_k , or if p_c falls relatively more than p_k . In either situation the worker can get on to a higher indifference curve by substituting some of the good whose relative price has fallen for the good whose relative price has risen. This point seems to have been overlooked by some early nineteenth century writers who concerned themselves with the significance of changes in provision prices for the worker's welfare, given certain relationships between wages and provision prices; it does not arise directly in respect of Malthus's argument.

[4] E.g., see M. T. Wermel, *The Evolution of the Classical Wage Theory,* (New York, 1939), chaps. 1–5.

less than 100 per cent if at all.[5] But Malthus does not specifically refer to this opinion of Quesnay's, nor does A. Smith.

Adam Smith, by whom Malthus was greatly influenced, treated several times of the relation between the price of provisions and that of labor. In his chapter on wages he observed, when arguing that real wages in Britain were above "scanty maintenance," that "the variations in the price of labour not only do not correspond either in time or place with those in the price of provisions, but they are frequently quite opposite";[6] and he concluded that "the money price of labour is necessarily regulated by two circumstances; the demand for labour, and the price of the necessaries and conveniences of life."[7] Yet, when contending that a bounty on corn would not benefit agriculturalists and would stimulate corn production little if at all, Smith argued that, since "the money price of corn regulates that of all other home-made commodities," including rude produce, it "regulates that of the materials of almost all manufactures," together with the "money price of labour" and the money price "of the complete manufacture."[8] Malthus took exception to this last "peculiar argument" of Smith, saying that "corn is a very inaccurate measure of labour" and denying that corn could be erected into a "standard measure of real value in exchange."[9]

(ii) Malthus's opinion usually coincided with that implicit in his criticism of Smith. In 1803 (*Essay*, 2nd. ed., pp. 445, 458–59) he remarked that "the money

[5] See Quesnay's note to Maxim XIX, in his *Maximes générales du gouvernement économique d'un royaume agricole*, in A. Oncken, *Oeuvres économiques et philospohiques de F. Quesnay*, (Paris, 1888), pp. 353–54, also pp. 329–30. See also G. Weulersse, *Le mouvement physiocratique en France*, (Paris, 1910), II, pp. 555–56, and my *French Predecessors of Malthus*, (Durham, 1942), pp. 204–06. In the *Essay*, 2nd. ed., p. 458, n., Malthus refers to *Physiocrati* and remarks that Dupont de Nemours had found an advance in the price of corn to be a real advantage.

[6] *The Wealth of Nations* (Modern Library Edition), E. Cannan ed., (New York, 1937), p. 75. See *ibid.*, pp. 67, 79–81, 82–84, 85–86, 824, on Smith's conception of the manner in which the supply of labor and the demand for it come into balance in the short run and in the long run.

[7] *Ibid.*, p. 85, also pp. 26, 815–16, 882. In his digression on silver (*ibid.*, p. 187) Smith remarks that when corn forms the "principal part of the subsistence of the labourer," the money price of labor "depends much more upon the average money price of corn" than upon that of other produce.

[8] *Ibid.*, Bk. III, chap. 5, pp. 476–77. "The money price of labour, and of everything that is the produce either of land or labour, must necessarily rise or fall in proportion to the money price of corn." *Ibid.*, p. 477. The substance of this argument, communicated to Malthus by Francis Horner in 1815 (see Grampp, *op. cit.*, pp. 933–34), had been expressed earlier by Horner, when he said that "competition" would eventually raise "the money price of labour, and, through that, of other commodities, to the money price of corn." See "Observations upon the Bounty upon Exported Corn," *Edinburgh Review*, Oct., 1804, No. IX, p. 197. Ricardo denied this thesis, in his *Principles of Political Economy And Taxation*, Sraffa ed., (Cambridge, 1951), chap. 22, also pp. 28-ff., 54 ff. See also notes 13 and 20 below.

[9] *Observations on the Effects of the Corn Laws* (1814), (Baltimore, 1932), pp. 13–15. For a full account of Malthus's view, as expressed in this pamphlet, see note 13 and text below. Smith's view is criticized also in the *Essay*, 2nd. ed., p. 458, and 6th ed. pp. 388–89, 392–95. Malthus arguing, much as did Torrens (see note 21 below), that changes in the price of corn affected only that part of wages going for food. A bounty would, of course, increase corn production. (*Ibid.*, pp. 395–96).

price of corn, in a particular country, is undoubtedly by far the most powerful ingredient in regulating the price of labour, and of all other commodities, but it is not the sole ingredient." Prices, above all those of manufactures, do not move at the same rate as the price of corn; and the price of labor has not always fallen in consequence of a decline in the price of corn. Similar opinions are expressed in most of his works.[10] The argument outlined in Section I appears only once, in *The Nature and Progress of Rent* (1815). Herein, after having described a high gold price level and a high corn-price/manufactures-price ratio as evidences of a country's "superiority of wealth," he went on to argue that a high corn price was not disadvantageous but advantageous to "the labouring classes."

"To supply the same demand for labour, the necessary price of production must be paid, and they must be able to command the same quantities of the necessaries of life, whether they are high or low in price. But *if* they are able to command the same quantity of necessaries, and receive a money price for their labour, proportioned to their advanced price, there is no doubt that, with regard to all the objects of convenience and comfort, which do not rise in proportion to corn, (and there are many such consumed by the poor) their condition will be most decidedly improved."[11]

The "if" suggests that wages and corn may move together, not that they must move together. In a footnote, furthermore, Malthus indicates that, while the price of labor is connected with that of corn, the two "rarely march quite abreast"; and in the text he adds that the price of labor will keep pace with that of corn, in the longer run, only "if the *demand for labour* continues increasing at the same rate, and the habits of the labourer are not altered."[12]

What appear to be traces of the argument are present also in a separately published appendix to a pamphlet in which this argument is rejected. It is suggested that the prices of commodities might fall in the same proportion as that of corn; but this view is then qualified, and it is indicated that the price of corn might "not effectually regulate the prices of other commodities," in which event the prices of other commodities would vary less than that of corn. The signifi-

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[10] In the first edition of the *Essay* Malthus's concern was whether an increase in poor relief or in money wages (originating in an expansion of manufactures) could improve the laborer's lot in the absence of an increase in the supply of provisions; his answer was in the negative (*Ibid.*, pp. 74–83, 305–313). In 1800 he attributed the rising price of provisions to their increasing scarcity, arising out of population growth. With the aid of a demand schedule, he sought to show that wages or poor rates could not be increased in real terms by proportioning them (as some proposed or attempted) to the price of corn or provisions so long as an irremediable shortage of grain existed, since the price of corn would continue to rise. See his *An Investigation Of The Present High Prices of Provisions* (1800), reprinted with an introduction by H. G. Johnson, in *Canadian Journal of Economics and Political Science*, 1949, XV, esp. pp. 194–95, 197–99, 202. See also *Essay*, 6th ed., pp. 332–333, 336–337, on this pamphlet, and p. 340, on the incapacity of inflationary measures to increase real wages.

[11] *Op. cit.*, pp. 39–41 (my italics); see also p. 42, cited in footnote 12 below. "The price of the necessaries of life is, in fact, the cost of producing labour." *Ibid.*, p. 40 n.

[12] *Ibid.*, p. 40 n., p. 41 (his italics); cf. note 19 and text below. On p. 42, however, he remarks that since two-thirds of wages estimated in corn "are spent in necessary provisions," a rise in the price of corn will benefit the poor, for "almost invariably, the higher is the price of corn, the more indulgences will a given surplus [i.e., corn-wage minus outlay upon necessary provisions] purchase." Cf. note 23 below.

cance of these connections for the welfare of labor is not considered by Malthus.[13] In his main pamphlet, however, he rejects the argument under consideration. Since meal or bread makes up two-fifths of a laborer's family budget, and other foodstuffs one-fifth, "a rise in the price of corn must be both slow and partial in its effects upon labour," and "the wages of labour can never rise and fall in proportion to the variations in the price of corn." Corn and labor "rarely keep an even pace together." The price of labor usually responds significantly to that of corn, but it responds slowly and partially, and at times it moves in an opposite direction.[14]

The argument outlined in Section I does not appear in Malthus's two main works, the *Principles* and the *Essay*, or in his later lesser works. In the second edition of the *Principles* (pp. 217–20) he states, much as in the *Essay* (6th ed., p. 379), that, when the agriculaural laborer is "paid in the first instance in corn, his wages in necessaries and conveniences will depend partly upon the quantity of corn which he earns, and partly upon the value of that corn in exchange for the other necessaries of which he stands in need." But his argument is not that the movement of money wages is governed solely by the movement of the price of corn; his argument is rather that the laborer's award is governed by "the demand and supply of labour," and that what this award amounts to in terms of corn therefore depends upon both the price of corn and the prices of other wage goods. He reports, furthermore, that the prices of labor and corn had not moved closely together, with the result that corn wages had been sometimes above, but more frequently below a peck[15] of wheat for a day's labor.[16] In the

[13] *Grounds Of An Opinion On The Policy Of Restricting The Importation of Foreign Corn*, (London, 1815), pp. 38–39, 41. In his *Notes On Malthus's Principles of Political Economy*, edited by P. Sraffa, (Cambridge, 1951), pp. 60–61, Ricardo refers to this statement and observes that Malthus "in some of his works," has "maintained that a rise in the price of corn will be followed by an equal rise in the price of labour, and by an equal rise in the price of *all* commodities." This view, Ricardo found, Malthus had rejected (in his *Principles*, 1st ed., p. 91) when admitting that a rise in the price of labor "lowers the price of a large class of commodities." The pamphlet *Grounds* was originally intended as an Appendix to Malthus's *Observations On the Effect of Corn Laws*, cited in note 9 above.

[14] *Observations*, pp. 10–11, 15, 17–18, 20, 31.

[15] In 1817 (See *Essay*, 6th ed., p. 583) Malthus said it would be "extremely desirable," were no land "taken into cultivation that could not pay the labourers employed upon it" the equivalent of a peck of wheat a day, since this would provide, at then current prices, some conveniences and comforts in addition to food. Elsewhere (*ibid.*, pp. 383–84) he suggested that laborers employed at the extensive margin should "produce the maintenance of as many, probably, as four persons." Population was likely to increase even with wages below a peck (*Principles*, 2nd ed., p. 254).

[16] *Ibid.*, pp. 249–50, 254, 258–60 (a similar opinion appears in the first edition). One must consider also the prices of conveniences and necessaries other than corn, the prices of all of which fluctuate less than that of corn (*Ibid.*, pp. 220, 260). A similar argument appeared in the first edition. Malthus described labor that was standard for a time and place as a better numeraire than corn, money, or some composite commodity, in part because the labor commanded by a commodity reflected the "difficulty of getting possession of it." See *ibid.*, pp. 111, 116, 119–21, 135; also comment in his letter to P. Prévost, in G. W. Zinke, "Six Letters from Malthus to Pierre Prévost," *Journal of Economic History*, 1942, II, p. 189. In the first edition (pp. 100 ff., also 94 ff.) Malthus had also considered a "mean between corn and labour." Ricardo, of course, found this argument fallacious (*Notes*, pp. 96 ff.).

Essay he describes as "certainly not true, that a rise in the price of raw produce, will, after a certain number of years, occasion a proportionate rise in labour and other commodities"; but he does endorse Smith's view that the money price of labor depends upon the money price of provisions, in that money wages must "be so proportioned to the price of provisions that labourers are enabled to bring up families of such a size as will supply the number of hands required."[17] He observes elsewhere that even though money wages do not keep pace with the rising "prices of corn" and other commodities, the greater amount of employment consequently to be had by women and children more than offsets the decline in the real price of labor; but he does not refer to the possibility that the prices of other wage goods may lag behind that of labor.[18] It was desirable that wages be "regulated by the price of the dearest grain," as they apparently tended to be "*when* the demand for labour occasionally exceeds the supply," since then wages would provide, "besides mere food," clothing and housing that were "decent."[19] But he did not infer that the price of labor was always wholly regulated by that of corn.

(iii) It has already been indicated that Ricardo, who studied Malthus's works sympathetically, believed that Malthus had on occasion given expression to the argument outlined in Section I, only to reject it in the *Principles*. Ricardo himself, as noted, had also rejected it.[20] Several of Malthus's contemporaries (Horner, Torrens, West, and Buchanan?) also attributed to him the argument outlined in Section I, but apparently solely on the basis of his pamphlets on rent and the Corn Laws.[21]

(iv) The thesis outlined in Section I is not compatible with Malthus's account of the manner in which wages are formed. Already in his *Observations*

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[17] *Essay*, 6th ed., pp. 385, 422. Malthus thus rejected Ricardo's definition of the "natural price of labour" as one just maintaining the population, saying that this definition could relate only to a finally stationary society and not to one that was still growing. See *Principles*, 2nd ed., pp. 223-24. On Smith see note 7 above. In one place (*Essay*, p. 388) Malthus argues that an increase in the "general price of labour" might be converted into an improvement in the terms on which goods, the foreign demand for which was inelastic, might be sold abroad.

[18] *Essay*, p. 427; cf. note 2 above. Malthus's opinion, attributed by Ricardo to Hume, is found wanting by Ricardo, in his pamphlet, *Influence Of A Low Price of Corn On The Profits Of Stock*. (1815). See *Works*, Sraffa ed., IV, (Cambridge, 1951), pp. 36-37.

[19] *Essay*, pp. 514-15 (my italics); cf. p. 379. See also *ibid*., p. 459, where he says that improvement of the lot of the poor requires that the price of labor rise more than that of provisions.

[20] See Ricardo, *Notes*, pp. 60-61, cited in note 13 above. Ricardo believed that an increase in the price of necessaries must be accompanied by an increase in money wages, though not by one proportional to the increase in the price of corn. He did not apparently allow for the substitution of other commodities for wheat when wheat rose in price. See *Principles*, pp. 103-04, also pp. 93, 118; also *On Protection To Agriculture* (1822), in *Works*, IV, pp. 216, 236-37. Ricardo's principal inquiry, when touching upon matters of this sort, is whether the value or cost of corn has changed relatively to that of other things or of labor. Ricardo was especially concerned with the impact of cost changes and of policy upon profits.

[21] See Grampp, *op. cit.*, pp. 930-35; the pamphlets are cited in notes 11 and 13 above. See especially R. Torrens, *Essay On. ... The External Corn Trade*, 2nd. ed., (London, 1820), Preface and pp. 79-92.

he remarked that a diminution in the real price of labor would not diminish its supply and eventuate in a higher real wage until the resulting decline in the rate of population growth had caused "the market to be under-supplied with labour"; and that, similarly, an increase in real wages consequent upon labor's becoming scarce would not eventually be lost to labor unless "a too rapid" growth of population eventually intensified "competition among the labourers."[22] In the *Principles* Malthus assigned primary importance to the "rate of increase in the quantity and value of those funds which are actually employed in the maintenance of labour," for so long as these increased faster than the labor force, real wages tended to rise.[23] When real wages rose, habits of consumption changed at least temporarily, laborers being provided with the opportunity of purchasing conveniences and comforts and acquiring a taste for them. If such habits became fixed, the standard of comfort of labor tended to hold fast, even when a decrease took place in the rate at which these funds increased; if not, the standard tended to fall back from the newly enjoyed level when the funds grew very slowly or became "nearly stationary."[24] It was most likely that newly acquired tastes would be retained, even in the face of a decline in the rate of increase of the funds, when civil liberty and related conditions obtained; such retention was not likely, however, when despotism and ignorance ruled.[25] In

[22] *Op. cit.*, pp. 10–11; also pp. 17–18 where he notes "how slowly and partially the price of corn affects the price of labour." In *Principles*, 2nd ed., p. 280, he noted that 16–18 years must elapse before an increase in births becomes an increase in the labor force. In the *Essay*, 2nd ed., pp. 14–16, also 420–21, Malthus presented an oscillatory model. Wages fluctuate with capital formation, which declines when wages have become relatively high and increases when wages have become relatively low. This view had appeared already in the 1st ed., pp. 31 ff., and was retained in the 6th ed., pp. 11 ff.

[23] *Op. cit.*, 2nd ed., pp. 158–59, 224, 234–36, 238–39, 240, 260, 277, 280; see also *Essay*, pp. 349, 367, 377, 379. "These funds consist principally in the necessaries of life, or in the means of commanding the food, clothing, lodging, and firing of the labouring classes of society." See *Principles*, p. 234; also p. 260, where he expresses himself in terms of the command a family's income gives it over corn, together with other elements entering into its budget. Cf. note 12 above. In the *Essay*, 6th ed., p. 419, he indicates that "the condition of the lower classes ... certainly does not depend exclusively upon the increase of the funds for the maintenance of labour, or the means of supporting more labourers"; these are merely "a very powerful ingredient." These classes are not "in a good state unless they have command of some conveniences and even luxuries." In *Principles*, 2nd ed., pp. 235–36, he noted that these funds tended to increase as fixed and/or circulating capital increased, though not necessarily (cp. *Essay*, 1st ed., chap. 16). On Malthus's demand theory see V. E. Smith's, "Malthus Theory of Demand And Influence On Value Theory," *Scottish Journal of Political Economy*, 1956, III, pp. 205–220.

[24] *Principles*, pp. 224–25, 226, 231; also p. 321 on the slowness with which new tastes develop. Without "prudence" the "lower classes" cannot continue to command conveniences and luxuries (*Essay*, 6th ed., p. 419).

[25] *Principles*, pp. 226–31; *Essay*, p. 387. Prudential habits served to retard the extension of cultivation beyond limits compatible with the retention of acquired standards of comfort (*Principles*, pp. 215, 225–26). Much of the above argument appears in the first edition. While Malthus observed that it took 16–18 years for a newly born person to mature into a member of the labor force (*Ibid.*, p. 280), he did not relate this interval so effectively to the process of living-standard expansion as did J. R. McCulloch (in his *Principles of Political Economy*, 2nd ed., (London, 1830), pp. 391–92), perhaps because he thought increasing outlays upon children tended to absorb wage-increases.

the *Essay* (6th ed., pp. 11 ff., 341, 420) it is the lower limit to declines in the price of labor that is stressed, it being noted that famine and sickness may quite quickly diminish the supply of labor, particularly when, with money wages fallen to lower levels, cheap foods are not substituted for expensive provisions.

III

Having found in Section II that Malthus, as a rule, set little store by the argument outlined in Section I, we shall find in this section that Malthus's case for high corn prices and agricultural protection rested upon his fear that low corn prices and cheap corn imports might, because of their long-run impact on population growth, retard improvement in the condition of the lower classes.

Malthus's argument runs in this wise. (1) Undue population growth representing the main threat to the improvement of the common man's lot, it is essential that the structure of prices not conduce unduly to such growth. Requisite is the type of structure found in advanced and closed agricultural-commercial economies, where the price of corn, expressed in terms of labor, is relatively high, and the prices of conveniences and luxuries are relatively low. Unfavorable is the type of price structure encountered in underdeveloped agricultural economies, where the price of corn is relatively low and the prices of conveniences and luxuries are comparatively high. For, when the price of corn is high, a life of indolence is impossible, the laborer having to work most of every week just to supply the food requirements of his family; whereas, when the price of corn is low, several days work will suffice, with the result that idleness tends to prevail. This condition is accentuated, furthermore, by the highness of the relative prices of conveniences and luxuries, since then laborers deem the prospect of winning conveniences and luxuries too remote to divert them from a life of indolence to one of industry. When, on the contrary, conveniences and luxuries are to be had at relatively low prices, and laborers, under the pressure of high corn prices, have already acquired habits of industry, they will be disposed to work additional hours for conveniences and luxuries. For these objects, furthermore, laborers are likely to develop a demand that is both elastic and expanding, and hence often incapable of being satisfied out of what remains of the week's income after family food requirements have been met, partly because it is rarely possible to substitute cheap food or relatively cheap comforts for high priced corn. In consequence, the laborer finds his awakened and expanding desire for conveniences and luxuries competing with his desire to marry and form a family. He cannot satisfy the former desire if he marries early and becomes encumbered with a growing family. Hence he tends to become prudent, to defer marriage and perhaps to limit procreation. Or, in terms of Section I, when W rises, he responds by holding n and hence nqp_c constant and expanding M, thereby substituting M for potential offspring. (2) Since cheap corn imports unduly stimulate population growth and make a country dangerously dependent upon foreign supplies, it is preferable that a large country supply its own corn, even though its marginal cost be already high and rising relatively to the cost of manufactures and the price of labor.

(1) The elements comprising his first argument may be identified in greater

detail. Population was particularly likely to grow when food, evaluated in terms of labor, was cheap, as in agricultural societies, in which also intervening variables unfavorable to population growth (e.g., civil liberty, accessibility of employment, level of prudence, etc.) tended to be weak.[26] It was essential, therefore, that manufactures and commerce be introduced, for then the proportion of the labor force engaged in agriculture would decline, the price of corn, expressed in terms of labor commanded, would rise, and the prices of manufactures would fall in most instances. There would come into being a price structure characteristic of a progressive, advanced economy,[27] together with a comparative abundance of relatively low priced manufactures suited to awaken the desire of the lower classes for luxuries and to make them accessible to these classes in exchange for work (i.e., negative leisure).[28] The "structure of society," comprising a commercial and a manufacturing as well as an agricultural population, would now be "most favourable" to "happiness" and presumably also conducive to prudence.[29] What the laborer lost through the decline in the corn value of his labor would be more than made up by the increase in its value, expressed in terms of conveniences and necessaries, provided that he did not insist on having a large family.[30]

"It seems to be proved by experience, that the labouring classes of society seldom acquire a decided taste for conveniences and comforts till they become plentiful compared with food, which they never do till food has become in some degree scarce. If the laborer can obtain the full support of himself and family by two or three days' labour; and if, to furnish himself with conveniences and comforts, he must work three or four days more, he will generally think the sacrifice too great compared with the objects to be obtained, which are not strictly necessary to him, and will therefore often prefer the luxury of idleness to the luxury of improved lodging and clothing .... On the other hand, if the main part of the labourer's time be occupied in procuring food, habits of industry are necessarily generated, and the remaining time, which is but inconsiderable compared with

[26] *Principles*, pp. 142, 146, 160, 161, 211, 223, 227–35, 239–40, 257, 345–51, 363–65; *Essay*, pp. 316, 367–68, 511–17. Institutional checks to food production in fertile lands are discussed in *Principles*, Bk. II, esp. pp. 331–50. Malthus stressed "the power of the necessaries of life, when properly distributed, to create their own demand" (*Principles*, 2nd ed., p. 161) far more than circumstances warranted, declared Ricardo (*Principles*, pp. 406–07). Smith (*op. cit.*, p. 146) had reasoned somewhat similarly. The "state of things" that obtains when corn is cheap and domestic manufactures are expensive "will naturally be unfavourable to the generation of those habits of prudential restraint which most frequently arise from the custom of enjoying conveniences and comforts, and it is to be expected that the population will not stop till the wages of labour, estimated even in food, are very low." See *Essay*, p. 367.

[27] *Principles*, pp. 177–79, 184–90, 199; *Essay*, p. 368, 514. Respecting the changes in price structure that accompanied progress in wealth, population, and division of labor, Malthus (with whose views on this subject Ricardo was in substantial agreement, *Notes*, p. 181, *Principles*, chap.v) was continuing in the Smithian tradition (*Wealth of Nations*, Bk. I, chap. xi).

[28] *Essay*, pp. 368, 379, 535. The favorable changes would outweigh such disadvantages as the increasing cost of supporting children and the greater employment in "unhealthy occupations." *Ibid.*, p. 420, also 424.

[29] *Essay*, pp. 409, 423–25.

[30] *Ibid.*, p. 424. "He will not have the same power of maintaining a large family; but with a small family he may be better lodged and clothed, and better able to command the decencies and comforts of life." *Ibid.*, p. 424; also pp. 400, 514. See also *Principles*, pp. 130–31.

the commodities it will purchase, is seldom grudged. It is under these circumstances, particularly when combined with a good government, that the labouring classes of society are most likely to acquire a decided taste for the conveniences and comforts of life; and this taste may be such as even to prevent, after a certain period, a further fall in the corn price of labour. But if the corn price of labour continues tolerably high while the relative value of commodities compared with corn falls very considerably, the labourer is placed in a most favourable situation. Owing to his decided taste for conveniences and comforts, the good corn wages of labour will not generally lead to early marriages; yet in individual cases, where large families occur, there will be the means of supporting them independently, by the sacrifice of the accustomed conveniences and comforts; and thus the poorest of the lower classes will rarely be stinted in food, while the great mass of them will not only have sufficient means of subsistence, but be able to command no inconsiderable quantity of those conveniences and comforts, which, at the same time that they gratify a natural or acquired want, tend unquestionably to improve the mind and elevate the character."[31]

(2) It was unwise for a country, large and fertile enough to supply its own produce, to adopt an exclusively commercial system and become dependent in a significant degree upon foreign sources for food. For then a country was exposed to evils of the sort that had dogged commercial states (e.g., Venice, Bruges) in the past. Supplies might be cut off in times of war, especially by hostile combinations of powers; or they might be reduced when exporting countries, faced by local shortages, restricted exports. A country that exchanged wrought goods for foreign produce might, in time, experience increasing competition from other countries in similar circumstances, with the result that its terms of trade would become increasingly unfavorable. Food-exporting nations might, because of indolence or from want of capital, not augment their output and export of food sufficiently to meet the growing needs of food-importing countries; whence imports would decline in comparison with requirements and their unit costs to importers would rise. Or food-exporting nations might themselves eventually introduce manufactures as their population and labor force grew, profits fell in their agricultural sectors, and enough laborers became available for the effective pursuit of manufacture; then food-importing nations would find food imports in ever shorter supply in comparison with needs and increasingly expensive.[32] Should such a decline in food imports come to pass, a country's

[31] *Essay*, pp. 424–25. See also *Principles*, pp. 335–36, where he states that if "facility of getting food creates habits of indolence," the worker may "prefer the luxury" of leisure to that of "possessing conveniences and comforts." Malthus did not allow much scope to the principle of substitution and to the substitutability of one type of food for another in response to a decline in the relative price of the former, or to the substitutability of conveniences, comforts, etc., for corn as the relative price of the latter rose. E.g., see *ibid.*, pp. 229–30; *Essay*, p. 335; cp. Ricardo, note 20, above. Malthus may have had vaguely in mind a situation of the sort suggested by Little when he supposed that a decrease in the excise on luxuries accompanied by an increase in that on necessities (for which the price-elasticity of demand is close to zero) might result in an increase in the consumption of luxuries at the expense of leisure. See I. D. M. Little, "Direct *Versus* Indirect Taxes," *Economic Journal*, 1951, LXI, p. 584.

[32] *Essay*, pp. 341, 371–77, 380–82, 389–91, 401–04, 411; *Principles*, pp. 214–15, where attainable food imports are described as quite limited. Because of variations in their local yields,

economy, based as it was on a population partly dependent on foreign produce, would suffer and might even contract markedly. It was not desirable, therefore, that a country, capable (as was Britain) of supporting many more people, become highly dependent on potentially transitory foreign sources of produce. It was advisable rather that such country restrict or exclude foreign food imports and depend upon its own comparatively more expensive food sources.[33] This entailed bringing into being, usually through agricultural protection, of an agricultural-commercial economy that was agriculturally self-sufficient except in periods of scarcity. Demographic and other advantages associated with a high corn price would be retained[34] as would others peculiar to an agricultural-commercial system. Even in such an economy, however, population would eventually approximate its upper limits, though the arrival of this time still lay far in the future. But the approach of this limit would neither be precipitate, as in some commercial economies, nor interrupted by stagnation, as in agricultural economies; it would be attended by comparatively little pain. Meanwhile security of the nation's subsistence would be assured; its agriculture would be stimulated, as would its manufactures, by the increasing amount of capital formed in agriculture, together with its careful allocation and the apparently associated support of invention.[35]

It was primarily upon these two premises, it would thus appear, that Malthus rested his case for agricultural protection and for high-priced (measure in terms of labor) corn.

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countries partly dependent upon imports experienced great variation in their import requirements, to the disadvantage of these countries and (apparently) their suppliers. *Essay*, pp. 389-91, 404-05.

[33] *Ibid.*, pp. 403-09. Britain could support 2-3 times its then population (p. 408). Malthus noted that freedom of trade was best for Europe as a whole, but not necessarily for individual countries (*ibid.*, p. 415). His analysis ran in terms of raw produce, other imported raw materials being disregarded.

[34] These advantages were noted above. In the *Principles* in particular Malthus expressed fear that repeal of the corn laws would be followed by a decline in English wages and prices and perhaps by a decrease in agricultural employment and in the real income of farm workers and their families. See e.g., *ibid.*, pp. 105, 130, 174, 213-15, 258.

[35] *Essay*, pp. 379-84, 386-87, 409-12; *Principles*, pp. 328, 345, on population redundancy. "The countries which thus unite great landed resources with a prosperous state of commerce and manufactures, and in which the commercial part of the population never essentially exceeds the agricultural part, are eminently secure from sudden reverses. Their increasing wealth seems to be out of the reach of all common accidents; and there is no reason to say that they might not go on increasing in riches and population for hundreds, nay, almost thousands of years." *Essay*, p. 382. Malthus seems to have looked upon rent, and not, as did Ricardo, upon profits, as the major source of capital. E.g., see *ibid.*, pp. 380, 383, 386, 396-97; *Principles*, pp. 213-16, 370 n. The laboring classes apparently could do little more than save against the rainy day (*Essay*, p. 525). Increases in a country's agricultural capacity, Malthus suggests, were more likely to be gotten through powerful stimuli and heavy investments than through a series of small increments. See *Essay*, pp. 384, 396, 410. Ricardo not only rejected Malthus's economic argument in support of agricultural protection, but also found unacceptable the argument that a country dependent upon food imports was ever likely to be in serious danger of having them cut off or markedly reduced. See *Works*, IV, pp. 8 ff., 210 ff., esp. 26-32.

THE ROLE OF THE MONETARY
ENVIRONMENT IN COST-INFLATION

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The persistent rise in prices observed in so many nations since the outbreak of the Second World War has formed the backdrop of a dispute among economists concerning the possibility, the extent, and the significance of the phenomenon called cost-inflation. The latter term implies that prices may be pushed up from the cost side even in the absence of excessive demand. Some observers have denied the possibility of such an occurrence. Others, while recognizing the theoretical possibility of such upward pressure, have doubted that the phenomenon is a significant one, and have insisted that virtually all of the rise in prices can be explained in terms of aggregate demand. Analysis of the problem has tended to divide into two interrelated but separable strands: (a) the influence of pressure from unions and other organized groups on wages and prices, and (b) the influence of the monetary framework within which the observed increases in wages, costs and prices take place. In discussing the former aspect of the issue, some theorists, backed by a large number of labor specialists, have questioned the power of unions.[1] In this paper, I shall confine my remarks to an appraisal of the monetary framework, and I shall disregard the strength of unionism, save insofar as it affects the monetary environment. In general it may be observed that those who have argued that inflationary pressure may arise on the cost side have tacitly assumed the existence of a 'permissive' monetary environment—in which the authorities are willing to increase the money supply to accommodate the growing number of transactions inherent in rising output, and may be forced to expand sufficiently to finance national output at rising levels of costs and prices.

The assertion that as a practical matter it might be impossible to maintain stability of the price level since cost advances outstrip increases in productivity, has evoked three distinct reactions— (a) a denial of the problem, (b) a suggestion that the monetary authority use its power to induce readjustments of any "spontaneous changes" in the wage-price level, and (c) a suggestionn that the Central Bank recognize the *fait accompli* and allow the price level to adjust to the new cost level.

Careful stuudy of view (a) indicates that ultimately it is not so much a denial

[1] Of the voluminous literature upon this facet of the question, I will mention only three representative articles: John Dunlop, "Productivity and the Wage Structure," in *Income, Employment and Public Policy* (Essays in Honor of Alvin H. Hansen), Norton, 1948; Milton Friedman, "Some Comments on the Significance of Labor Unions for Economic Policy," in *The Impact of the Union* (ed. D. McC. Wright), Harcourt Brace, 1951; and Sumner Slichter, "Do the Wage-Fixing Arrangements in the American Labor Market Have an Inflationary Bias?," *American Economic Review*, May 1954, XLIV

of the possibility of cost-induced inflation as a policy prescription that if the Central Bank only adheres to its duty of stabilizing the price level, the leaders of organized labor and others will hesitate to push up costs. It differs, therefore, only in degree from view (b) which quite consciously urges that unemployment be allowed to develop as rising costs produce a squeeze on liquidity rather than to permit the price level to move upwards. View (c) holds that output and employment are more important considerations than stability of the price level, and that the proper role for the Central Bank is to permit the price level to move upward by increasing liquidity rather than to allow unemployment to develop. It is suggested that, in fact, pressures on the Central Bank would not permit it to follow a policy of preserving price level stability. It is recognized that society faces a cruel dilemma in that it must permit a steady upward drift in prices or else emasculate its full employment program.

It should be observed, in passing, that no longer does a substantial group of economists hope that the fruits of productivity may be passed along in the form of falling prices. As a practical matter, it is recognized that, considering the structure of modern society, we might well regard ourselves as fortunate if we can contain rises in money incomes within the bounds set by rising productivity —and thereby avoid a *rise* in prices. Some observers—not infrequently associated with special interest groups—have gone so far as to suggest that a rising price level, in itself, is desirable.

I. A THEORETICAL FRAMEWORK

In light of his later work, it is perhaps surprising that the best all-round theoretical treatment of the problem of cost-inflation is to be found in the writings of J. M. Keynes. In the *General Theory*, Keynes was caught in the mood of the depression, and the *rigidity of wage rates* became the indispensable weapon for demonstrating the existence of an underemployment equilibrium. In the earlier *Treatise on Money*,[2] however, although it remained a minor part of the analysis, Keynes was alert to the possibility of " 'spontaneous' changes in the rate of efficiency-earnings and in the price-levels due to the character of the Wages System (including in this, e.g., the powers and activities of the Trade Unions.)"[3] The main emphasis of the *Treatise* lay in its treatment of changing price levels as a method of adjustment to changing cost and demand conditions. For this reason, despite its defects, it may well be regarded as far more in tune with the typical problems of our era than is the *General Theory*.

It will be recalled that at the heart of the analysis of the forces causing changes in the price level was Keynes' tautological reformulation of the quantity equation—in the form of the fundamental equations. The second of these, that for the price level as a whole was

$$\Pi = \frac{E}{O} + \frac{I - S}{O}\ \ |^4$$

[2] J. M. Keynes, *A Treatise on Money* (Harcourt Brace, 1930).
[3] *Ibid.*, pp. 167-8.
[4] *Ibid.*, p. 137. As is well known, the fundamental equations were sharply criticized by Alvin Hansen on technical grounds (see "A Fundamental Error in Keynes's 'Treatise

in which the first term, E/O or earnings in relation to output, represented efficiency-wages and was sometimes rendered as W_1. As the basis of the cost structure, efficiency-wages were also the basis of the price structure, and any change in efficiency-wages (an 'Income Inflation') might normally be expected to raise the price level.

The second term of the equation was the more significant one in that it supplied the 'mainspring of change.' When savings equalled investment, normally the economy was in equilibrium, but when investment exceeded savings,[5] a 'Profit Inflation' ensued and the price level rose. In the opposite case, that of a 'Profit Deflation,' the price level fell. Normally the latter term represented the more potent forces and any disequilibrium might be expected to react back upon the first term—that of efficiency earnings. A Profit Inflation encouraged entrepreneurs to expand their operations and to bid up the receipts of the factors of production, thus inducing an 'Income Inflation.' Similarly a Profit Deflation or losses brought about a reduction in the offers of the entrepreneurs, thus inducing an 'Income Deflation.'

This was, however, only the likely direction of events, for prices might rise if the Wage System brought about spontaneous changes in efficiency earnings (i.e., those that did not arise "as a result of a change in offers made by entrepreneurs acting under the influence of profits and losses.")[6] The response of Authority depended upon its powers: whether it had control of the Earnings System or the Currency System or both. Keynes's first two cases need not detain us long, for Authority was in a position to compel adoption of what it considered to be the equilibrium rate of earnings. In the third condition:

. . . the case usually assumed by Monetary Reformers—we have at least a partial control of the Currency System but not of the Earnings System, so that we have some power of deciding what the equilibrium price-level and rate of earnings is to be, but no power of bringing about this equilibrium except by setting into operation the mechanism of induced changes.[7]

Thus the only route open to the Authority was to rupture the equilibrium between savings and investment, by a policy of monetary stringency, and to bring on a Profit Deflation which, it was hoped, would bring about an Income Deflation and a lowering of the level of efficiency-wages and the price-level. (The

on Money,'" *American Economic Review*, September 1932, XXII, p. 462). Though Keynes did subsequently revise his definitions, nevertheless the equations fell into disuse. They are here revived because of their usefulness in the analysis of inflation.

[5] In the *Treatise*, the divergence between savings and investment was achieved by excluding "profits" or "windfalls" from earnings. Savings are defined as a part of income or earnings, since they are equal to income less expenditure. Investment, therefore, is equal to savings plus profits. Profits become the stimulus to expansion and play much the same role that inventories play in recent formulations of national income determination. In the light of the subsequent confusion on the subject of the relationship between savings and investment, it is necessary to realize that the magnitudes are essentially the same in real terms, and that Keynes was already aware of the fact.

[6] *Ibid.*, p. 166.

[7] *Ibid.*, p. 169

opposite policy would bring about a rise in wages and prices through Profit Inflation which would induce an Income Inflation.)

If, however, wages remained rigid in the face of a lowered price level, the economy suffered from a continuing Profit Deflation with growing unemployment, rather than the hoped-for Income Deflation. With the experience of the twenties fresh in his mind, Keynes was quite suspicious of the mechanism of induced changes, and advocated (tentatively) a policy of accommodation by the Authority to changes in efficiency earnings, barring the possibility that the rise in the price level be allowed to get out of hand.

Keynes's position in the *General Theory* was fully consistent with his earlier attitude, although the emphasis was altogether different. In the latter work, the first term of the fundamental equation (E/O) had become simply *the wage-unit which was assumed to be fixed*, while the second term, that of the savings-investment relationship, more than ever occupied the center of the stage. Through it the level of effective demand was established, thus determining income, output, and employment. Only at one point in the *General Theory* is the highly restrictive assumption that the wage unit is fixed relaxed to concede the possibility that employee pressure may raise wages before full employment is reached.[8] This phenomenon is referred to as "positions of semi-inflation having some analogy (though an imperfect one) to the absolute inflation."[9] Such conditions are dismissed as not lending "themselves to theoretical generalizations," but clearly his treatment of this aspect of the problem in the *Treatise* belies this statement. The relegation of cost-inflation to the minor role of "semi-inflation" lessens the value of the *General Theory* for dealing with contemporary problems. In the *General Theory*, perhaps even more strongly than in the *Treatise*, it was Keynes's belief that in the event of upward pressure in costs Authority should be acquiescent.

As suggested earlier, three reactions are possible to the exposition of the problem of cost-inflation as in the Treatise: (a) denial of the validity of the analysis and rejection of the possibility of spontaneous changes in efficiency earnings, (b) acceptance of the dilemma and positing the defense of the integrity of the monetary unit as the duty of the Monetary Authority, or (c) adoption of Keynes's position with the suggestion that the Montary Authority should accommodate the money supply and the price level to spontaneous changes in earnings. Each of these positions will be treated in turn.

II. CONFLICTS OF OPINION

(a) *The denial.* The thesis that anxiety concerning cost-inflation is much overdone has found its most vigorous proponents in Professor Walter Morton[10]

[8] J. M. Keynes, *The General Theory of Employment, Interest, and Money*, (Harcourt Brace, 1936), pp. 295-96 for the restrictive assumptions, p. 301 for their relaxation.

[9] *Ibid.*, p. 301.

[10] Walter A. Morton, "Trade Unionism, Full Employment and Inflation," *American Economic Review*, March 1950, XL, and "Keynesianism and Inflation," *Journal of Political Economy*, June 1951, LIX.

and Dr. Clark Warburton.[11] It will be recognized that their position, that those who stress cost pressures have underestimated the stabilizing power of sound monetary policy, is the counterpart within the monetary field of what may be called the "Chicago view" that the economic power of industrial unionism is negligible. Morton and Warburton would agree with Milton Friedman, who has presented the most detailed statement of the latter hypothesis, that the power of unions to influence either the level or the structure of wages has been grossly exaggerated. Stated briefly, they hold that prices and wages are determined or administered in accordance with general demand conditions. If the Federal Reserve (and presumably the Federal Government from the fiscal policy side) take care to prevent excess demand and if they are determined to use their powers to maintain price stability, then employers "will resist wage increases when they cannot be passed on to the consumer and must come out of . . . profits."[12] Under these conditions, labor leaders, it is suggested, will discover that too aggressive a policy will mean loss of income and employment, rather than tangible gains.

Labor leaders may act foolishly and at times impetuously, but they will not continually beat their heads against a stone wall. The question remains, therefore, whether the policy of price stability is strong enough to stand against the threats against it, or merely a house of straw which can be blown over at the first puff.[13]

Warburton has gone on to treat the problem more selectively. He agrees that some powerful unions are able to push up wages more rapidly than engineers and managers can increase output per man hour, but does not consider this possibility to be "valid for unions generally in a nation which has adopted a policy of maintaining a stable level of prices."[14] Under these circumstances unions may be expected to practice forbearance save in those industries in which demand is inelastic. Higher output and lower prices in other industries will tend to compensate for the restricted output and reduced employment wherever wages are pushed up. In short, a mild distortion of the wage-cost-price structure is conceived of as a substitute for inflation.

It may be suggested that this treatment, while recognizing the power of individual unions, pays insufficient attention to the strength of sympathetic pressure in transmitting wage advances to the weakly organized areas. Some sort of price plateau accompanied by distortion of the wage structure may, to be sure, exist on a temporary basis, but a rise in aggregate demand by inducing the rectification of the wage structure would stimulate a rise in prices as labor costs increase. Employers outside of the strategic industries are likely to respond to 'key bargains' by raising wages in order to avoid (a) subjecting the union leadership to insistent membership pressures, (b) union organizing drives, (c) lowered employee morale, or (d) unfavorable shifts in government policy. De-

[11] Clark Warburton, "Is a Rising Price Level Inevitable or Desirable?" *Michigan Business Review*, March 1953, V.

[12] Morton, "Trade Unionism . . ," p. 28.

[13] *Ibid.*, p. 28.

[14] Warburton, *loc. cit.*, p. 3.

spite the absence of excessive demand in the post-Korean period, the evidence does suggest that we have experienced an upsurge in the entire wage structure with advances in wage rates outstripping the rise in productivity.

In the final analysis, the Morton-Warburton approach does not so much represent a denial of the upward pressure of costs on prices as a policy prescription for dealing with such pressures. If the Federal Reserve fully intends (and is permitted) to use its powers to preserve price stability, then these pressures can be contained. Unions must learn—through the growth of unemployment if necessary—that moderation is essential and that the Federal Reserve is not to be tampered with. The central bank should use its influence to induce those changes in wage rates which will eliminate any unemployment that has developed.

(b) *The cost-push.* When the Morton-Warburton view is expressed in terms of policy prescription, it becomes patent that the difference between it and the cost-inflation position is one of emphasis rather than diagnosis. Though observers such as Professor Haberler[15] and Professor Bronfenbrenner[16] stress pressures from the cost side, they recognize—in fact they emphasize—the importance of monetary demand as a permissive factor. Unless the monetary-fiscal authorities cooperate in raising prices, unemployment will develop as unions push up labor costs. The difference is a matter of degree; as Bronfenbrenner suggests,[17] the quantity theory comes into operation via the wage-price spiral rather than (as Morton would have it) the wage-price spiral coming into operation via the quantity theory.

Both sides would agree that when demand is excessive, inflation is in the cards, and that when unemployment is significant, increases in labor cost may be prevented. Their differences relate to an intermediate condition in which employment is high without excessive demand. In this case, the cost-inflation group suggests that unions, either through ignorance or sophistication, may push up the wage level *prior* to any increase in the money supply or in effective demand, and that subsequent action of the monetary-fiscal authorities would justify that rise in terms of employment by encouraging a rise in prices. The Morton-Warburton position, on the other hand, seems to suggest that the *prior existence* of a redundant money supply and excess demand is necessary to induce such a rise in wages and prices. If the prerequisites are not satisfied, unions after some tentative and exploratory attempts to raise wages will be brought up short by a slight growth in unemployment. With respect to the empirical question: how much unemployment is needed to stop the rise in labor costs?—there is a clear-cut difference between the two groups.

The parochial structure of collective bargaining possibly strengthens the

[15] Gottfried Harberler, "Wage Policy, Employment, and Economic Stability," in Wright, *op. cit.*, and "Causes and Cures of Inflation," *Review of Economics and Statistics*, May 1948.

[16] Martin Bronfenbrenner, "The Dilemma of Liberal Economics," *Journal of Political Economy*, August 1946, LIV, and "Wage-Price Spiral Versus the Quantity Theory," *American Economic Review*, September 1950, XL.

[17] Bronfenbrenner, "Wage Price Spiral . . . ," p. 262.

tendency toward cost-inflation. Even though it may recognize the spillover effects on the price level, any individual union must act as if its particular wage level were more important than the general wage level. It pays any group to be first in the race. On the other hand it would be quixotic for any group to accept a loss in real income out of consideration for general price effects. Internal pressures on the union leadership undoubtedly serve as a powerful impetus to higher wage demands. On the more general level, labor may mistakenly believe that costs can be raised *and* employment maintained without an increase in the money supply or a rise in prices. If, on the other hand, the leadership is sophisticated, it may depend upon pressures being brought to bear on the Federal Reserve to rectify the situation—if the latter should obstinately refuse to expand the monetary wherewithal. Herein lies the ultimate weakness of the Morton-Warburton view which posits that "the central bank will resist inflationism and labor and business will be obliged to act accordingly."[18] Even if organized groups do recognize the implications of adhesion by the central bank to a stable price level policy, their behavior might be just the reverse of that anticipated. Unions might believe that the Reserve is only bluffing or will change its mind when and if unemployment actually develops, or they might feel that the framework within which the Central Bank is permitted to operate may be changed even though the authorities are sincere in their professions. If so, the wage rate might be forced up to put the System to the acid test of unemployment, in fact to call its bluff. Doubtless, the case might be otherwise, had labor leaders previosly been convinced of the capacity and intent of the Federal Reserve to adhere to its stated goals, but in the light of traditional union aspirations, this is perhaps expecting too much.

(c) *The role of liquidity.* An increase in labor costs implies an immediate and direct increase in the need for cash on the part of business concerns. Subsequent price increases will intensify the need for cash, for firms must pay their suppliers. Consumers may similarly be put under pressure. In terms of the Fisherine equation, $MV = PT$, when P rises, either M or V must rise if the previous level of transactions is to be maintained. After a careful study[19] of business liquidity in this country, Dr. Joseph Aschheim has suggested that the liquidity margin for most of our smaller non-financial concerns is quite modest. Cash balances are tautly stretched in meeting current liabilities. In the case of larger concerns the ratio of liquid assets to current liabilities is typically higher, but, Aschheim suggests, the additional funds have generally been raised in the market to finance expansion, and have, therefore, been committed in advance.

One might anticipate, under the circumstances, that if the Central Bank follows a non-expansive policy and keeps bank reserves under continual pressure, that the relative reduction of liquidity consequent upon a rise in prices

[18] Morton, "Trade Unionism . . . ," p. 34.

[19] Joseph Aschheim, *Central Banking and Wage-Induced Inflation*, 1954, unpublished thesis, Harvard University Library. Writing some years later and in the light of recent experience, I am more inclined than was Aschheim to allow greater leeway for a rise in velocity; otherwise his general approach is adopted here.

will reduce total spending or aggregate demand in real terms. This would appear to be true, unless there were a sharp change in business habits, since the smaller concerns have committed all their cash to financing transactions on the current price level, and although the larger firms are in a more flexible position, current dissipation of previously committed liquid assets would have repercussions on gross investment.

Such a conclusion would, however, be premature, for it would overlook the possibility that a rise in business liquidity may be achieved through a more intensive use of the money stock, an activation of idle balances, in short a rise in velocity. In the current boom, for example, this sort of process seems to have been at work.[29] In the face of rising interest rates, the banking system has disposed of a heavy backlog of investments and used the proceeds to extend commercial and other loans. As the demand has risen, business and household liquidity has been proportionately expanded via the activation of idle balances, with the changing bank portfolios serving as the vehicle of transfer. In spite of the squeeze on bank reserves, an enormous expansion of money transactions has been financed by the rise in velocity. Federal Reserve officials might view the rise in V as the natural and not undesired counterpart of the restriction of credit, yet such an attitude would be far too complacent, since the activation of funds does permit an escape from pressure on the liquidity position.

It seems fair to observe that limits exist to the offsetting movements of V, especially if the reins have not been loosened for some time, and the reserve pools of idle balances have been dried up. Eventually, therefore, credit restriction will bring pressure to bear on the liquidity position of firms and households and prevent the increase in total spending necessary to finance the current volume of transactions at a higher price level. When the Federal Reserve refuses to expand the credit base as costs and prices are pushed up, the initial brunt of credit restriction is likely to fall on smaller firms, since the larger firms have recourse to the public securities markets and to other financial intermediaries. If—in the process of credit-rationing—banks were to attempt to give priority to the demands of their larger (and more important) customers, pressure on the smaller concerns would be increased by a displacement of loans to the larger concerns. Save for the most loyal and established customers, the smaller firms would be hard pressed to find the additional funds that would be needed. Meanwhile many consumers would discover that their own cash reserves had become inadequate for the financing of their contemplated expenditures. Attempts by the banks to alleviate the stringency—by cashing-in maturing Government issues, for example—would be short-lived. If the System stands firm, Treasury refunding would occur through the money market at a higher rate of interest—draining funds and further raising the cost of borrowing. Otherwise the Federal Reserve would find it *necessary to reverse its policy immediately and to expand the reserve base of the banking system* by absorbing part of the new Treasury issue.

[29] Cf. Warren L. Smith, "On the Effectiveness of Monetary Policy," *American Economic Review*, September 1956, XLVI, esp. pp. 595-604.

The incidence of credit restraint will fall disproportionately on smaller concerns. If the pressure is pushed far enough, a scramble for liquidity may develop, with firms attempting to reduce their inventories. General inventory reduction is, however, most difficult to achieve; the overall effect of an attempt to move from goods to money would be a downturn in economic activity. Thus in all probability, merely a non-expansive policy on the part of the System—inspired by the determination to preserve the monetary unit—would be sufficient, after an initial spurt to bring to a halt the rise in costs and prices. Rostow has phrased the issue concisely:

Wage increases can be 'inflationary' at a time when a high level of investment spending is sustaining the flow of income, only if the government and the banks choose to offset them by inflationary acts: that is by creating more money .... The wage increase presents society with a choice between unemployment and an inflation of all prices sufficient to make production profitable at the higher wage rate.[21]

(d) *How much unemployment?* It would appear that the difference between those that deny and those that affirm the possibility of cost-induced inflation breaks down under analysis to the question: How quickly will unemployment bring to a stop the rise in costs and prices? Most of those expressing fears on the cost-inflation question would agree that a stringent monetary policy would be an effective antidote.[22] There is no great conflict between stating (a) in the institutional climate in which we live, costs may be 'pushed up,' and (b) that in this climate, monetary restraints have decayed which allows costs to be 'pulled up.' If the authorities are acquiescent, the money supply is the permissive agent, and rising costs the proximate cause of inflation.

Estimates of the degree of unemployment required to halt the rise in costs and prices have run as high as eight to ten million in the case of A. G. Hart. In the light of our experience of the 'thirties Hart has suggested that "the bargaining power of a strong union may actually be raised by unemployment,"[23] since the public is then inclined to view labor as the underdog and the government becomes more responsive to labor pressure. Experience with the mild recession of 1949 has led to a downward revision of the required unemployment. Hart has said that his earlier view may have been "overpessimistic." Sumner Slichter has perhaps expressed the new consensus best, in stating: "after unemployment has reached a certain level, probably around 4 or 5 per cent of the labor force,

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[21] E. V. Rostow, "Market Organization and Stabilization Policy," in Max Millikan (ed.), *Income Stabilization for a Developing Democracy*, Yale, 1953, pp. 466-67; quoted by Aschheim, *op. cit.*, pp. 78-79.

[22] Excluding perhaps Henry Simons and Charles Lindblom, who are inclined to overgeneralize from our experience in the 'thirties. The rise of costs in 1936-37 when unemployment was high appears exceptional and probably represented a phase of the organizational drives of the period.

[23] Albert G. Hart, *Money, Debt and Economic Activity*, 2nd ed. (Prentice Hall, 1952), p. 248. Gottfried Haberler reached a similarly pessimistic conclusion, i.e., that unemployment would have to be 10-15 per cent to stop the rise in costs (in Wright, *op. cit.*, p. 244).

the unions would not be able to raise wages faster than the average advance in output per man-hour."[24]

Since circumstances vary, however, such an estimate must be qualified. Clearly the degree of aggressiveness of the labor movement enters into the question, and this is dependent in part upon the estimate by unions of the threat to their security. If union policies are as cautious as Morton suggests, the requisite unemployment will be much lower than if union policies are as bold as (say) Lindblom has anticipated. Current economic tendencies will clearly influence the ultimate outcome. It is doubtful, for example, that when output is expanding sharply that any reasonable level of unemployment can prevent a rise in labor costs and prices. In 1955, to take a case in point, as the revival proceeded, labor costs rose sharply, although some 4–4½% of the working force remained unemployed.

(e) *A rising price level?* It is not surprising in light of the needed unemployment to preserve price stability, that many economists, following the third stand of Keynes's analysis in the *Treatise*, have urged acceptance of Keynes's policy prescription—i.e., that the Monetary Authority adapt both its goals and the money supply to spontaneous changes in wage rates. Perhaps, the most prominent among those advocating that the Federal Reserve encourage a rise in prices by expanding liquidity has been Sumner Slichter.[25] Slichter, like Keynes, appears to be somewhat uncomfortable about a *continual* rise and merely suggests that it would be the lesser of two evils. While conceding that "the decline in the value of the dollar will create grave injustices," he adds that "the injustices caused by rising prices ... are probably no greater than the injustices caused by stable prices."[26] In the face of a strong labor movement, the case rests upon the desirability of avoiding the loss of production through unemployment.

Let us not overlook the fact that an economy with slowly rising prices has advantages as well as disadvantages in comparison with an economy that has a stable price level over the long run. It has more employment, more output, and a higher standard of living than an economy with a stable price level.[27]

Though Slichter has alluded to a number of other advantages of rising prices (i.e., stimulating imports and easing the dollar problem, reducing the burden of the short-term debt, and providing a source of capital[28]), his argument

[24] Sumner Slichter, "How Bad Is Inflation?," *Harpers Magazine*, August 1952, p. 55.

[25] See S. H. Slichter, "How Bad Is Inflation?," *loc. cit.*; "A Slowly Rising Price Level the Lesser of Two Evils," *Michigan Business Review*, March 1953 V; "The Integrity of the Dollar," An Address before the Academy of Political Science, April 11, 1951; and "Wage-Price Policy and Employent," *American Economic Review*, May 1946, XXXVI.

[26] Slichter, "The Integrity of the Dollar," *loc. cit.*, p. 109.

[27] *Ibid.*, p. 116. He further observes that the nation "will not tolerate such a ridiculous policy ... (i.e., to) ... keep unemployment sufficiently high to equate the bargaining power of the unions and employers" (p. 111).

[28] The first point is discussed in "A Slowly Rising Price Level ...," *loc. cit.*, pp. 7–8; the latter two in *The American Economy* (Knopf, 1948), pp. 84–94, 119–120

rests essentially on the need for offsetting the rise in costs. In the longer run he envisages greater public resistance to the *rise in costs*, but feels that short-run resistance to a *rise in prices*, without tackling the cost problem, would be foolhardy.

Other writers, with Keynesian predilections, have argued that rising output is the important issue, and that a slight upward movement of prices is a matter of relatively little consequence.[29] Finally, a number of observers have shaken off all traditional doubts and hesitations on the question of inflation. John D. Clark has seen fit to remind the Congress that it was the position of Mr. Truman's Council of Economic Advisers that the proper cure for inflation was credit liberality rather than credit restraint.[30] C. Clyde Mitchell has gone on to allege that "the inflationist idea wins in the political arena every time it is clearly presented,"[31] and avers that stable prices are dangerous. "Again we must face the question: Who is right, the majority of the economists or the majority of the American People . . . the welfare of the 85 per cent should not be tied inflexibly to a stability fetish to guarantee the purchasing power of bonds and retirement funds owned by a smaller group."[32]

III. PRESSURES ON THE RESERVE

When presumably disinterested academic observers are so dubious of the merit of the stable price criterion, it behooves us to examine the attitudes of important interest groups in the society. The Federal Reserve after all functions in a political environment, and its capacity to carry out its aims is dependent upon attracting to itself sufficient support from powerful groups. A Central Bank continually on the defensive, warding off attacks upon its authority, goals, or judgment is hardly in a position to implement its policy decisions. With few interest groups in the society preferring unemployment to price instability, the Federal Reserve would be forced to pursue its price-stabilization policy indirectly—by cat and mouse techniques—and could not admit the conflict between full employment and price stability.

In this regard, the views of organized labor are of particular interest. It is no secret that the unions have eyed the System with deep suspicion. Not only has organized labor opposed individual System policies, but has been frankly antagonistic to its independence and power, *per se*.[33] Labor has opposed the use of monetary controls generally, and the freedom of the System in the government bond market in particular—in fact any tendency towards a flexible interest rate policy. It has advocated greater (unwanted) power for the System

[29] For example, Seymour Harris, comments, *United States Monetary Policy: Recent Thinking and Experience, Hearings before the Subcommittee on Economic Stabilization of the Joint Committee on the Economic Report*, 1954, pp. 144–47.

[30] *Ibid.*, p. 48.

[31] *Ibid.*, p. 151.

[32] *Ibid.*, pp. 151–52.

[33] See, for example, the statements of Donald E. Montgomery of the CIO and Boris Shishkin of the AFL before the Patman Committee, *Monetary Policy and the Management of the Public Debt, Hearings before the Subcommittee on General Credit Control and Debt Management* of the Joint Committee on the Economic Report, 1952, pp. 817–823, 827–831.

in *restricting* bank loans and raising reserve requirements, but has advocated such an increment of power only for a controlled and muzzled System. To organized labor, the present institutional basis of the Federal Reserve is unsatisfactory.

During a boom period, such as the one that we are now experiencing, complaints about Federal Reserve tactics are heard from parties who are not at all concerned about the institutional basis of the System, so long as the cost of borrowing never rises. Agriculture, small business, the construction industry, and the durable consumer goods industries generally have been disturbed by the policy of credit restraint; doubts have crept into such citadels of economic rectitude as the General Motors Corporation and *Business Week*. Harlow Curtice and Walter Reuther may disagree about many things, but not about the baleful effects of credit stringency upon auto sales.

Recognizing that it can never win a popularity contest, and faced with this array of unsympathetic interest groups, the System must plainly tread cautiously in implementing any policy decision to maintain stability of the price level. This would be so even if the System did not have conflicting responsibilities. The Federal Reserve has, however, recognized its *own* responsibility for the maintenance of high level employment—when unemployment is greater than 4 or 5 per cent the System would be obliged to follow an expansionist policy, even though costs and prices were rising. The System, moreover, recognizes the obligation to prevent "disorderly conditions" in the government securities market; it might, therefore, be forced to abandon a policy of restraint in order to aid the Treasury in its refunding operations.

Faced as it is with powerful political groups urging expansion and obligated to compromise between economic goals which are not mutually consistent, the System would inevitably find it necessary to provide the monetary basis for at least part of the rise in costs. The alternative of credit stringency in an economy in which price and wage decisions are increasingly biassed upward by the growing dominance of large institutions, implies that the relative decline in output and empoyment would have to be greater than in the past to prevent a rise in prices. How long would the "Fed" be permitted to persist in a policy of restraint in a society in which pubic opinion is intolerant of significant unemployment and the balance between the two major political parties is narrow? Both would be anxious to do something for the unemployed, and to augment the pressure on the Reserve. Higher interest rates would be a consequence of a policy of restraint, and the increased cost to borrowers and the increased cost of servicing the debt would evoke a flood of charges that System policy is determined solely in the interest of "Wall Street," the "bankers," and the like.

It would be naive, under these conditions, to expect that the System could adopt a policy of completely suppressing increases in costs and prices. At best the Federal Reserve can hardly do more than to moderate the pressures on the dollar. It is not, however, precisely true to assert, as does Morton, "if everyone wants inflation, we shall have inflation."[34] Each of our interest groups is opposed to inflation, in principle, but, no matter how distressing it may be, a rise

[34] Morton, "Keynesianism and Inflation," *loc. cit.*, p. 262.

in the price level is to be preferred to its alternatives—i.e., unemployment, a
fall in real income, or a change in our free institutions. With respect to the
monetary authorities, Morton, who has risen to the defense of other innocent
parties chosen for the role of scapegoat, seems to be indulging in a bit of scape-
goating himself. In his view it is the Central Bank that is to blame for the rise
in prices, for, by permitting the existence of a monetary environment in which
the old Adam in man can flourish, it is derelict in its main duty to preserve a
sound dollar. In the absence of public support, however, System officials are as
powerless as anyone else to prevent the depreciation of the dollar. Evasive
statements on this issue by its officers[35] indicate that the Federal Reserve
does not feel its political position sufficiently impregnable or its responsibilities
sufficiently clearcut to oppose on principle wage developments which might
abstractly be viewed as contrary to sound money policy. The System's policy
is necessarily one of compromise, and particularly when wage pressure is general,
it must adjust, at least partially, to the new cost-price situation.

IV. COMPENSATORY SPENDING AND THE FULL EMPLOYMENT GUARANTEE

Despite the recent revival of interest in monetary policy, it is generally
recognized that in certain cyclical conditions (i.e., deep depression) its effective-
ness is limited. The more powerful but somewhat coarser weapon of fiscal
policy will, under such circumstances, be brought into play. Indeed, whenever
economic activity recedes, built-in stabilizers automatically come into operation.
Fiscal policy may, however, suffer from the same general drawback as does
monetary policy in an economy dominated by institutional power-groups, for
it may prove to be an arduous task to maintain full employment when the cost-
price system has become ossified through group control over wages and prices.
As the economy loses its suppleness, the need for compensatory spending rises.
Yet additional expenditures, whether 'injected' by the government or generated
within the private sector, may be siphoned off in the form of higher incomes for
groups already employed, before there is an opportunity to expand production
and employment. Whenever the government intervenes to reverse a contractive
tendency, it will be haunted by the spectre of a forward policy on the part of
organized groups. Sequences of income generation may be swallowed up by ad-
vances in wages and prices, and the hoped-for beneficial effects may be lost
in the cumulative upward movement. "The Keynesian remedy for depression,
while . . . not necesarily inflationary, if pursued ex post, is inflationary if guaran-
teed ex ante."[36] If wage and price stability is not considered, the adoption of a
full employment guarantee through fiscal measures would mean that the aban-
donment of the last competitive restraint against the continual ascent of wages
and prices.

By acquiescing in uncorrected distortions, implementation of the full em-
ployment program may imply, moreover, the abandonment of the fruits of a
properly functioning cost-price mechanism and the perpetuation of maladjust-

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[35] Cf. *United States Monetary Policy, op. cit.*, pp. 241–42.

[36] Morton, "Keynesianism and Inflation, *loc. cit.*, p. 262.

ments. The weakness of the policy is that it assumes away precisely the type of reckless wage and price behavior that it is likely to exacerbate. As John Williams has observed: "the heart of the [employment] problem lies in the relations of prices, costs and profits ... [but] ... in recent years ... the tendency has been to regard price-cost behavior as a kind of *force majeure* to be 'onset' rather than corrected."[37] There is a note of irony in the fact that exclusive reliance on the fiscal weapon is liable to be dangerous, as long as price-cost conditions remain unsatisfactory, yet their improvement will diminish the need for the weapon, since the buoyancy of a balanced cost-price mechanism would undoubtedly ease the problem of economic stabilization.

Under our present institutional arrangements we are faced with the cruel dilemma of accepting either chronic unemployment or a secular rise in prices. Gottfried Haberler has suggested that "an economic society like the American one, is not likely to permit inflation to go very far in peacetime,"[38] but the existence of a pool of unemployed necessary to restrain an indefinite rise in wages and prices is hardly a stable political condition. Memories being short, a public clamor for expansionary policies would soon develop, leading once again to rising prices. Alternating periods of inflation and unemployment are to be expected, for a democratic society is unlikely to submit to a system of direct controls in peacetime.

In contrast to the popular Keynesianism of the early forties, we now recognize how likely we are to face what Keynes called "positions of semi-inflation" long before full employment has been reached. The monetary-fiscal authorities must continually adjust their policies to spontaneous changes in efficiency earnings. Proponents of Keynesian remedies cannot have it both ways. They must recognize the logical dilemma and either join with Slichter and Harris in accepting a secular rise in the price level as the preferable alternative, or else join Morton in his rejection of rigorous Keynesianism. It is not logically tenable to avail oneself of Morton's rebuttal of cost-induced inflation without acknowledging the stringent safeguards which he would place on fiscal and monetary policy.

V. THE ISSUE IN PERSPECTIVE

In the nature of a sweeping generalization, it has been suggested that in the nineteenth century the monetary authorities controlled the money supply and the price level and the wage rate was adjusted thereto, while in the present century the unions determine the wage rate and the monetary authorities adjust the money supply and the price level to that parameter. Slichter has commented that "the unions are likely to become the real makers of credit policy and possibly, in large part, of fiscal policy as well."[39] Though something of an over-

[37] J. H. Williams, Statement before the Joint Congressional Committee on the President's Economic Report, July 2, 1947, regarding the Employment Act, reprinted in *Postwar Monetary Plans*. 3d ed. (Knopf, 1947), p. 240.

[38] Haberler, "Wage Policy ...," *loc. cit.*, p. 58.

[39] S. H. Slichter, "Wage and Prices," *Proceedings of the Academy of Political Science*, May 1948, XXIII, p. 61.

statement, it is patently true that monetary manipulation in response to domestic
realities rather than in response to international pressures has reduced the in-
dependent authority of the Central Bank. Trade union wage policy has moved
into that vacuum, and the increased bargaining strength of organized labor
goes a long way towards determining the appropriate price level and in inducing
the monetary authorities to provide the necessary monetary wherewithal to sup-
port that level of prices. But the initial generalization contrasting the two cen-
turies would only be true if the monetary authorities are willing and able to
"justify" completely and immediately, by an increased flow of money the wage
level that the unions demand—rather than to offer resistance, in defense of the
monetary unit. Sir Dennis Robertson has vividly portrayed the dangers of
the changing environment:

> . . . In the bad old days of the gold standard . . . it was fairly evident to everybody that
> if an exorbitant level of wage-rates was demanded, the money would simply not be there
> to pay the wage-bill . . . . But what does seem clear is that if the framework is scrapped,
> if monetary authorities are always prepared to create without question whatever *flow of
> money* is needed to discharge whatever *wage-bill* is needed to reconcile full employment
> with whatever *wage-rate* is demanded by the Trade Unions, they have in effect abdicated
> from exercising that sovereignty over the standard of value which we thought we had
> committed to their charge."

In reality, governments have been reluctant to permit trade union wage policy
to operate in an atmosphere of such unqualified freedom. "The view prevalent
during and after the depression—namely, that henceforth governments must
take remedial steps immediately on the appearance of 'Beveridge' unemploy-
ment . . . has been significantly tempered by fears of inflation during recent
years."[41] In two recent recessions, administrations of both parties have been
cautious in adopting remedial measures. As yet, the wage rate and the price
level have not fallen under the exclusive control of labor unions. Instead govern-
ments have been willing to tolerate some unemployment rather than to allow the
wage and price situation to get out of control. In the course of this adjustment
the full employment goal has been compromised with other objectives in de-
termination of the wage level and the money supply. The pattern of pressure
on governments is not such as to force the monetary authorities to abdicate to
the unions their responsibility for the price level. The resistance of the monetary
authority to complete union autonomy is still powerful, and unions are still un-
able to push up wage rates with impunity. On the other hand, the government
does find it necessary to prevent excessive unemployment, and in the fulfill-
ment of that commitment, the monetary authority is forced to retreat (albeit,
grudgingly) and to permit a slow rise in the price level. Though their power
still remains limited, unions have sufficient strength to overcome the resistance

⁴⁰ D. H. Robertson, "What Has Happened to the Rate of Interest?," *The Three Banks
Review*, March 1949, p. 25.

⁴¹ Kenyon Poole, "Full Employment, Wage Flexibility, and Inflation," *American Eco-
nomic Review*, May, 1955, XLV, p. 585.

of the Central Bank. Credit restriction might be a satisfactory safeguard of the monetary unit, but wide sections of the public view with disfavor the exercise of monetary weapons, and they are supported by a considerable segment of the economists. The monetary authorities will not be able to make sufficient use of its tools to prevent a rise in prices since the public is unwilling to tolerate the consequences. There is much truth in Seymour Harris' provocative comment that "the monetary authority has sought ways to evade responsibility rather than accept it."[42] In the present political complex, the Federal Reserve must retreat.

<center>CONCLUSION</center>

In the face of the upsurge of wages, certain factors may serve as "shock-absorbers," tending to mitigate the impact of wage advances on costs and prices. Such limiting factors are: (a) acceleration of productivity advances, (b) high mobility of resources, (c) flexibility and responsiveness of the wage structure to structural changes, (d) favorable location of the wage leadership, and (e) the prevention of excess demand. These conditions represent, however, an unattainable goal, for they express a forlorn hope that the adaptability of a competitive economy can be retained in an environment of large institutions, that flexibility of the wage structure may be obtained through the action of particularistic unions without generating union rivalry, and that elected public officials will use monetary-fiscal tools without generating excess demand and will refrain from "undue" interference with appropriate resource mobility. Although these aspirations are, then, in large measure utopian, the more closely actual conditions approximate the ideal the more moderate will be the upward pressure on wages, costs, and prices.

When the difficulties are phrased in this way, the future of the monetary unit would appear to be bleak indeed. Contemporary conditions for the determination of wages and prices are such as to encourage a bold policy on the part of power groups. A firm bulwark against upward creeping wages and prices might be interposed if the monetary authorities were fully determined to allow the divers economic groups to "bear the consequences of their actions" and to refuse to expand the monetary base. For the reasons discussed, it seems most unlikely, in the present climate of political opinion, that the monetary authorities will be permitted to possess such firm determination. On the contrary, it appears almost certain that whenever the wage-price balloon has risen to a level such that the rarified monetary atmosphere prevents a further rise, that the authorities will expand the monetary atmosphere and so permit additional elevation.

"S. E. Harris "Introductory Remarks," in "Symposium on Monetary Policy," *Review of Economics and Statistics*, August 1951, XXXIII, p. 179. Harris continues: "... there is no disposition to fight inflation among the powerful interests that govern the country ... They all give lip service to the fight; but in their activities they are highly inflationary.... It is not possible in a democratic society to set up an independent agency which would be free from political influences and thwart the desires of the public" (p. 179-180).

INVESTMENT INCENTIVE, TAXATION, AND ACCELERATED DEPRECIATION

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There are two major arguments for accelerated depreciation under the tax laws: (1) It reduces tax liabilities and thus increases the cash sources of firms that purchase new assets. (2) It stimulates the incentive to purchase new assets. These effects are distinct. Because it increases investors' cash sources, accelerated depreciation is similar to a lower tax rate itself. The difference between accelerated depreciation and general tax relief is that accelerated depreciation increases the cash holdings only of firms that actually purchase new assets, whereas general tax relief also benefits firms that do not necessarily acquire new assets.[1]

The investment incentive argument, however, maintains that accelerated depreciation stimulates the desire to purchase new physical assets.[2] Even if the cash resources of investors remain unchanged despite business taxes (say by some combination of transfer payments and offsetting reductions of other taxes), private investors would invest more under a system of accelerated depreciation than they would under conventional depreciation. The investment incentive argument is implicit in the view of those who hold that businessmen will not risk acquiring new assets and equipment because of Treasury-imposed depreciation practices. It is this incentive argument we wish to examine.

Unfortunately, traditional capital and investment theory gives little attention to business depreciation practices. There have been, however, good reasons for this omission. Any physical asset may be viewed as a stream of future dollars, which would include the asset's scrap value. From an investor's viewpoint, the decision whether to purchase a depreciable asset—which would contribute to investment spending—is simply a process of evaluating the asset's future "cash payout" as he would evaluate any other terminable cash annuity. Through a time discounting or capitalization process, an investor may derive a "demand price" which provides him some positive rate of return. Or given the asset's supply price or construction cost, in addition to some idea

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[1] Cf. Evsey D. Domar, "The Case for Accelerated Depreciation," *Quarterly Journal of Economics*, November 1953, LXVII, pp. 493–519. It should be emphasized that accelerated depreciation gives real tax relief to firms that are growing. It does not merely postpone tax payments as some students seem to hold. The only condition where accelerated depreciation simply postpones tax payments is when a firm becomes static. Thus accelerated depreciation, as Domar shows, becomes a practical way of subsidizing new and growing business through income tax exemption.

[2] Cf., e.g., E. Cary Brown, "Business-Income Taxation and Investment Incentives," *Income, Employment, and Public Policy: Essays in Honor of Alvin H. Hansen* (New York: W. W. Norton, 1948), pp. 300–316; and Richard Goode, "Accelerated Depreciation Allowances as a Stimulus to Investment," *Quarterly Journal of Economics*, May 1955, LXIX, pp. 191–220.

of the asset's future earnings, the investor may calculate a rate of return which enables him to compare the given investment with possible alternative investments.

Depreciation accounting practices do not ordinarily enter into the asset valuation process, nor should they affect investor behavior. Depreciation accounting merely allocates the total profitability (or unprofitability) of an asset over the institutionalized income accounting periods during which the asset exists. Asset valuation and investment decisions are concerned with the valuation of a future "cash payout"; depreciation accounting is an historical recording process that need not have anything to do with the investment decision-making. For these reasons, the pure theory of investment and capital could ignore depreciation accounting practices.

Taxation, however, radically changes this situation. For any single investment, taxation reduces the net earnings of the asset and hence the rate of return. When an asset's accounting profits are the object of taxation, the depreciation method can affect the *timing* of tax liabilities. The timing of tax liabilities can also affect the rate of return, or the present value of the asset. Through taxation, depreciation accounting practices therefore influence the basic elements of capital, interest, and investment theory. It is in this connection that questions arise about the investment incentive effects of accelerated depreciation. Much of the force for accelerated depreciation under the tax laws rests on the theory that it will stimulate the incentive to invest. This position, however, raises some fundamental issues related to the entire theory of investment. Our discussion hopes to sharpen these fundamental questions by using an important current tax issue as a "case in point."

I shall try to show that it is not obvious that accelerated depreciation stimulates investment incentive. Indeed, accelerated depreciation may discourage the incentive to invest. Precisely what impact business taxation and accelerated depreciation have upon investment incentive depends upon the theory of aggregate investment one applies to these problems. For example, if we apply the Keynesian investment theory and its investment schedule concept to tax analysis, it follows that taxation reduces investment incentive and that accelerated depreciation tends to restore it. But the Keynesian theory of investment is questionable, which can be shown by its application to tax problems. On the basis of an alternative approach to investor behavior, I shall try to show that business taxation need not deter investment incentive, and that accelerated depreciation may not be necessary to stimulate it. Hence, we shall also illustrate some misleading and erroneous element of currently-popular investment theory.

Part I analyzes the impact of business taxation and depreciation within the framework of the Keynesian investment and interest theory. Part II employs an alternative approach to investor behavior and interest theory which is essentially derived from the work of Leon Walras and Professor F. H. Knight. Part III evaluates and criticizes the Keynesian theory in view of these findings. Part IV explores some equity aspects of accelerated depreciation based

on the previous sections. Part V contains some general conclusions and policy implications.

Throughout the analysis we assume that investors have adequate knowledge to project the future earnings of assets and to capitalize them by a time discounting process. We also assume that investors evaluate assets and claims in such a way as to equalize their yields. This assumption means that in equilibrium the rate of return on new investment, the capitalization rate, and "the" interest rate are identical. It also means that all assets and claims, old and new, are perfect substitutes in the minds of investors. This "homogeniety" assumption is implicit in the traditional approach to investment behavior, including the Keynesian theory. Such an assumption is very unrealistic since it abstracts from uncertainty and imperfect foresight. It is not the place here, however, to attempt the reformulation of traditional asset valuation theory that an explicit recognition of imperfect foresight would require.

I. TAXATION, INVESTMENT, AND DEPRECIATION: THE KEYNESIAN CASE

The Keynesian investment theory rests upon the investment schedule concept which relates the flow of investment spending to the interest rate. It thus provides an explanation of investment demand or spending. Let us briefly summarize the behavior forces behind this theory: Investors anticipate the number of future dollars that new physical assets will earn. They discount these future earnings streams with a given interest (capitalization) rate. As long as the capitalized value of a future earnings stream exceeds the cost of constructing the physical asset that will yield it, that asset will be demanded and constructed. Asset construction and investment spending take place until the capitalized values of marginal assets equal their construction costs. The level of investment spending is therefore determinate.[3]

Let us now introduce a proportional tax on the net earnings of all assets. For simplification, we define net earnings as accounting profits before the deduction of contractual interest but after deduction of a straight line depreciation charge. The tax lowers the future earning stream of each new asset whose construction is contemplated. The present capitalized values of some of these universally lower earning streams will fall below their construction costs. Total investment spending falls. We may consider this relationship in detail.

Suppose an investor has an opportunity to purchase for 100 dollars an asset which would earn 30 dollars a year for five years. If the investor employed conventional depreciation, he would obtain net earnings of 10 dollars a year for five years. If the discount (interest) rate were 10 per cent, the present capital value of the five-year thirty dollar income stream would be $113.70. It would definitely pay to construct and/or purchase the asset. Now suppose the government announces a tax of 50 per cent on net asset earnings. With normal straight line depreciation, the yearly net earnings of the asset fall to five dollars, which leaves a five-year gross yearly earnings stream of 25 dollars.

[3] Cf. Alvin H. Hansen, *Monetary Theory and Fiscal Policy* (New York: McGraw-Hill, 1949) p. 58, for a more extensive presentation of this theory.

Discounting this 25 dollar future income stream with the 10 per cent rate lowers the present value of the asset to $94.75. The asset would therefore be unprofitable to acquire and construct. Numerous other assets would also be unprofitable to construct, and total private investment spending would fall. Thus it follows from the Keynesian theory that business earnings taxes reduce investment incentive.[4]

It is possible, however, to overcome this adverse impact upon investment incentive by an appropriate depreciation policy. At a limit, the depreciation policy permitted by the government can fully restore investment incentive. One hundred per cent write-offs of assets during the year in which they are acquired, or the "expensing" of capital outlays, would overcome the adverse incentive effect of the tax. Expensing capital outlays is the logical extreme of accelerated depreciation.[5] Let us develop its implications in detail.

Consider the same asset which earns 30 dollars a year before taxes under accelerated depreciation with the same 50 per cent tax. It still costs 100 dollars on the market. But if an investor can charge the asset's market cost to current income, the "cost" of acquiring the asset *to the investor* is only 50 dollars. Charging the asset's full 100 dollar market price to current income reduces the investor's tax base by 100 dollars.[6] With a 50 per cent tax rate on business

[4] Within the general Keynesian system, it is possible that the tax may indirectly lower the interest rate itself through the following chain of events: The tax lowers the incentive to invest and hence investment spending. Total income and spending fall, which releases some cash formerly required for transactions purposes. The newly-redundant cash finds its way into the loan market which lowers the interest rate. If the interest rate is already at its "floor," however, as dictated by the highly elastic segment of the liquidity preference function, the interest rate, of course, cannot fall. But it nevertheless follows that the tax lowers investment spending, and whatever effect it may have upon the interest rate occurs because of the tax's adverse impact on the inducement to invest.

[5] The idea of expensing capital outlays is not as far-fetched as it may seem. In practice such items as advertising, research, product development, and mineral exploration are difficult to capitalize for accounting purposes. Yet in reality they have more in common with capital expenditures than they have with current operating costs.

Moreover, the notion of expensing *all* capital outlays seems to have recently received serious support for *tax accounting* purposes and hence as a public policy proposal. Cf. Joel Dean, "Four Ways to Write Off Capital Investments: Management Should Have a Wider Choice," *Journal of Business*, April 1956, XXIX, pp. 79-89.

Professor Dean seems to base his advocacy of what he terms "cash flow depreciation" (the expensing of capital outlays) on two points: (1) the distinction between expense and capital outlays is arbitrary; and (2) conventional depreciation requires a prediction of assets' life spans, and such predictions are not meaningful. With regard to his second point, it should be remarked that "rate of return" capital budgeting—which Professor Dean has elsewhere advocated so forcefully as a means for making rational investment decisions within the business firm—also requires an estimate of an asset's life span. If a meaningful rate of return can be estimated for an asset, a meaningful life span can be estimated for depreciation purposes. If on the other hand it is meaningless to try to estimate assets' life spans for depreciation accounting purposes, it is also meaningless to try to estimate rates of return for capital budgeting purposes. Could it be that Joel Dean, the tax policy advocate, is refuting his pioneering work as a capital budgeting expert?

[6] The averaging of gains and losses for tax purposes acquires great importance under such a scheme. For example, it is possible for a firm that acquires enough new assets in a given

income, the investor's tax liability falls 50 dollars. Hence the "cost" of acquir-
ing the asset which earns 30 dollars a year for five years is only a net 50 dollars.
Since the investor has already exhausted depreciation charges by writing-off
the asset's market price, the entire 150 dollars of future earnings (30 dollars a
year for five years) is taxed at the 50 per cent rate. The after-tax earnings of
the asset are thus 15 dollars a year. Discounting the 15 dollar five-year income
stream with the 10 per cent discount rate yields a present value of $56.85. This
present value exceeds the asset's "cost" to the investor by the same proportion
that existed before taxation. It will, therefore, be profitable to purchase the
asset. Thus extreme accelerated depreciation restores the rate of return over
"cost" (the marginal efficiency of investment) and the incentive to invest to
its pre-tax level.

This outcome holds whether a firm or an economy is growing, static, or
declining. It is entirely independent of the possibility that a combination of
growth and accelerated depreciation may afford investors permanent or quasi-
permanent tax relief. Accelerated depreciation, in combination with asset earn-
ings taxation, raises the rate of return on new investment over what it would
be without accelerated depreciation. It increases the marginal efficiency of
investment, which a tax in combination with straight line depreciation would
otherwise lower. When we ignore the favorable effect of growth for tax payers,
our major point amounts to this: A proportional tax on asset earnings requires
the investor to pay the same total amount of taxes over the lifespan of his
investment regardless of the depreciation method he uses. The depreciation
method, however, determines the *time shape* of his total tax liability. Accel-
erated depreciation tips the time shape of the tax payments in the investor's
favor, which increases the marginal efficiency of investment. Through increas-
ing the marginal efficiency of investment, or rate of return, accelerated de-
preciation allegedly stimulates investment spending.

II. TAXATION AND THE CAPITALIZATION RATE: AN ALTERNATIVE THEORY

The adverse incentive effect of a proportional business (asset) earnings tax
follows from assuming a given discount rate. But is it correct to assume a given
capitalization rate when we treat taxes on all asset earnings? It is therefore
necessary to make one's theoretical orientation on interest theory explicit. We
may illustrate this point by analyzing the same problem on the basis of an
alternative theory of capitalization rate determination and asset valuation: the
cost or "productivity" theory such as that advocated by Professor F. H. Knight.[7]

year that current income may be easily exhausted by the charges extreme accelerated de-
preciation permits. Opportunity to carry the accounting loss backward makes accelerated
depreciation more meaningful for such a firm.

In order for extreme accelerated amortization not to discriminate against new firms, as
opposed to older firms that have income against which to average losses, it would be necessary
for the government to share the losses new firms experience at a rate equal to the tax rate.
Cf. Brown, *op. cit.*, for a further discussion of these relationships.

[7] Cf. Frank H. Knight, "The Quantity of Capital and the Rate of Interest, I," *Journal of
Political Economy*, August 1936, XLIV, pp. 433–463.

Under a productivity theory the capitalization rate *is* the net rate of return over the money cost of constructing new assets on the margin of new investment. Given the rate of return obtainable on the margin of new investment, the present value of all existing assets and claims is determinate by a discounting process. This discounting theory is simply another way of saying that no investor will pay more for an existing source of future dollars than it costs to create a similar money flow on the margin of new investment. Since most (but not all) borrowing and lending of money is undertaken to finance the acquisition of real assets, "the" explicit interest rate will tend to equal the ratio of net income to cost. "The" money interest rate is a "shadow" of the profitability of investment itself.

Let us now imagine the imposition of, say, a fifty per cent tax on the net earnings of all assets, as measured by accounting profits before contractual interest charges. The tax announces to all investors that the net earnings of any new assets they contemplate constructing will be 50 per cent lower. The productivity ratio, or rate of return over cost, also falls 50 per cent. For example, if the marginal rate of return over cost in the economy before the tax's imposition were 10 per cent, the capitalization rate would be 10 per cent. After the imposition of the 50 per cent tax, investors can only obtain a five dollar perpetual future income stream from the investment of 100 dollars. The capitalization rate therefore falls to 5 per cent. The tax also reduces the net earnings of existing assets by the same proportion, or fifty per cent. Discounting the lower future income streams of existing assets with the proportionately lower discount rate leaves their values unchanged. Should there exist debt or other legal claims whose payouts are unaffected by the tax, discounting the unchanged cash flows with the lower rate increases their capital value. Their owners will reap capital gains. But as old claims mature, new lending agreements will not be negotiated at rates which exceed the lower capitalization rate.

What effect does the tax have on investment incentive? Our theory of capitalization rate determination provides no answer. This approach to investment phenomena differs markedly from the neo-classical theory and the Keynesian theory which has largely supplanted the neo-classical theory. We can only say that the tax lowers the private rate of return on new and old assets. At this point, we need some behavior propositions which may suggest how individuals react to the lower, over-all rate of return before we can say anything about investment spending.

The incentive to invest is the willingness of individuals and groups to purchase new physical assets. The amount people spend on new assets reflects investment incentive. One important motive which induces people to acquire new assets is the desire to obtain net future income. Although investors value the total payout of any physical asset, it is the expectation that the asset in question will earn an amount over its lifetime which exceeds its supply price that motivates them to acquire assets. The total excess of earnings over cost can be transformed to a rate of return on the investor's outlay through a capitalization process which expresses the net number of future dollars per year an investment earns. Investors seek to obtain net future income through their investment ac-
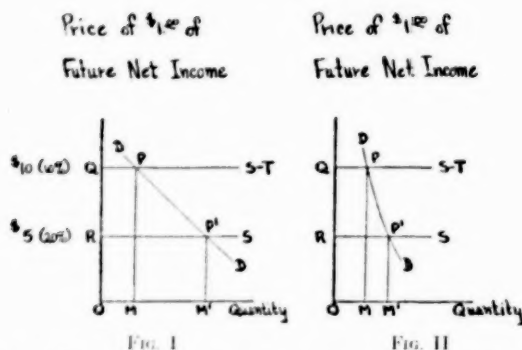
FIG. I and II. DEMAND AND SUPPLY OF FUTURE INCOME OBTAINABLE ON THE MARGIN OF IN-
VESTMENT.

tivity. A tax increases the price of net future income. For example, if the rate
of return on investment were 20 per cent, one dollar of future net income would
cost five dollars. If a tax reduces the rate of return from 20 to 10 per cent, it in-
creases the price of one dollar of future income from five dollars to ten dollars.
When we view investor behavior in this framework, what effect does taxation and
accelerated depreciation have upon incentive? The answer is: We simply do not
know. It depends on the elasticity of demand for future net income. It is a
matter of investors' "tastes."

Figures I and II illustrate this relationship. The vertical axis measures the
price of one dollar of future net income; the horizontal axis measures the num-
ber of future dollars purchased. The demand curve (DD) is assumed to slope
downward and to the right. This assumption rests on the observation that people
tend to buy more of something whenever its price falls. The supply curve of
future net dollars (S) reflects the investment opportunities that exist in the
economy. It is drawn horizontal because we do not care to speculate about how
increased levels of investment spending affect the rate of return.[5] Intersection

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[5] According to traditional investment theory, the supply curve for future dollars should
be drawn upward-sloping to the right, which is another way of saying that the marginal
efficiency of investment schedule slopes downward and to the right.

The conventional theory that the rate of return falls due to increased levels of invest-
ment spending rests on two points: (1) Over long periods a larger capital stock causes
diminishing returns to capital as a productive "factor," and (2) during short periods in-
creasing money costs of constructing new assets reduces the rate of return. Both of these
points are highly questionable. Over long periods the investment process evokes change, in-
cluding new technology, that may increase the rate of return. The complex forces of economic
growth and development operate in such a way as to make predictions about the rate of
return downright speculative, and we do not care to draft a philosophy of history onto our
price analysis. For a criticism of the position that the increasing money costs of constructing
new assets are responsible for a declining marginal efficiency of investment over relatively
short periods, cf. J. A. Stockfisch, "The Relationships Among Money Cost, Investment, and
the Rate of Return," *Quarterly Journal of Economy*, May 1956, LXX, pp. 295–302.

of the demand and supply schedules for future dollars (at point P') determines
their price (M'P') and the quantity of future net income purchased (OM').[9]

The area embraced by the intersection of the supply and demand curves (e.g.,
OM'P'R) is especially relevant for the theory of investment. It measures the
amount spent on new assets. It is identical to investment spending which the
Keynesian investment schedule purports to explain. Whenever we speak of in-
vestment spending, it is the amount people *spend* on future dollars that we are
talking about. Any force that affects the incentive to invest causes the area under
any point on the demand curve DD to be larger or smaller.

A proportional tax on asset earnings raises the price of future dollars, or
lowers the rate of return. In Figures I and II the tax, which is assumed to be a
fifty per cent net earnings tax, raises the price of one future dollar of net income
from five dollars (a twenty per cent rate of return) to ten dollars (a ten per
cent rate of return). The tax shifts the entire supply curve for future dollars
upward. The S-T curve in Figures I and II reflect this upward shift.

Accelerated depreciation with asset earnings taxation, however, would tend
to lower the price of future net income obtainable on the margin of new invest-
ment, or to increase the rate of return. At a limit, the expensing of new capital
outlays would restore the rate of return that would exist if there were no tax
at all. The S-T curve of Figures I and II would coincide with the original S curve.

The effects of these tax and depreciation measures upon investment spending
depend upon the elasticity of demand for future net income, or investors'
"tastes." Figure I depicts the outcome when the demand is elastic; Figure II
shows the impact of taxation and alternative depreciation practices when the
demand is inelastic. If the elasticity of demand for future net income is elastic,
as shown in Figure I, the argument of those who advocate accelerated deprecia-
tion on investment incentive grounds is correct. The tax under normal deprecia-
tion reduces investment incentive and the rate of investment spending. This
outcome is shown in Figure I where the area OM'P'R, the pretax level of invest-
ment spending, is greater than area OMPQ, the after tax level of investment
spending. Introduction of accelerated depreciation restores the pretax rate of
return. Accelerated depreciation, when the demand for future income is elastic,
therefore induces a larger rate of investment spending. This is the "Keynesian
investment schedule case."

If on the other hand the demand for future income is inelastic, as shown in
Figure II, imposition of a tax which reduces the rate of return will positively
stimulate the incentive to invest. In Figure II the area OMPQ, that represents
the after-tax level of investment spending, is larger than area OM'P'R. In terms
of investor behavior, this outcome occurs because investors presumably seek

[9] This apparatus as an approach to capital and interest theory is essentially that of Leon
Walras. Cf. his *Elements of Pure Economics*, translated by William Jaffé, (London: Allen
and Unwin, 1954) pp. 267-277. Cf. also Frank H. Knight, "Interest," reprinted in *Ethics of
Competition*, pp. 261-262, who uses the same approach, but not the diagram.

to recoup some of their tax-caused loss of income by investing even more.[19] Under these conditions the introduction of accelerated depreciation will *reduce* investment incentive. The tax measure will have an effect which is exactly opposite that intended. If this particular elasticity condition exists—and it is a question of fact, not of theoretical speculation whether it exists—accelerated depreciation as a device to stimulate investment incentive is not only unnecessary but also it is undesirable.

III. THE KEYNESIAN THEORY: A PSYCHOLOGICAL ASSERTION

The Keynesian investment theory implies, insofar as its tax implications suggest, that the demand for future income is elastic. Thus it is not accidental that so many followers of the "new orthodoxy" are now advocating gentler tax treatment of business. Yet we have tried to show that the position that business taxation reduces investment incentive is not necessarily correct. If the previous arguments are valid, a question of broader theoretical interest nevertheless remains: Why does the Keynesian theory lead to this particular outcome?

The Keynesian investment theory leads to the conclusion that a lower rate of return reduces investment incentive because "the" interest rate (or yield of debt claims) provides a minimal opportunity return for potential real asset purchasers. Unless physical asset purchasers can obtain the yield of debt claims they will not invest. But what determines "the" interest rate, or minimal opportunity return itself? According to strict Keynesian theory it is the interaction between the quantity of money and "liquidity preference." A tax, if anything, will reduce the money supply which will increase the interest rate, and further restrict investment spending. This effect is a consequence of the tax's deflationary force. Let us abstract from it and assume that somehow the money remains in private hands by some other compensating fiscal acts, like debt retirement or other tax reductions. At best, the interest rate remains unchanged. The adverse investment incentive effect of the tax itself, therefore, must spring from the behavior behind the liquidity preference function. The behavior proposition implicit in the liquidity preference function seems to be the notion that investors insist upon receiving some absolute, minimal rate of return before they part with cash for any other type of asset, whether it be debt claims or physical equipment.

[19] At this point the need for a sharp distinction should again be emphasized. Whether investors can spend more on new assets depends on how the tax affects their sources of funds. The tax per se will reduce those funds and for this reason alone will restrict investment spending. The impact of the tax on cash sources should be depicted in Figures I and II by a leftward shift of the demand curve. Thus an asset earnings tax in isolation will evoke simultaneously a movement along, and a shift of, the demand curve for future income. Issues about investment incentive turn on the movement along the curve, and the consequences of that movement for investment spending. These issues treat behavior responses to price and, especially, relative price data. The argument that the tax reduces investment spending because it reduces cash holdings is a proposition regarding the responses of people to changes in the quantity of money.

This distinction is of more than academic interest. As a practical policy issue, there are alternative ways of increasing investors' cash balances that may be superior to liberalization of depreciation methods. One of them is simply a reduction of the general tax rate itself.

Yet why should investors insist upon receiving some absolute, minimum return —which is measured by the interest rate—before they part with cash? The answer seems to lie in the notion that cash is a hedge against uncertainty (the precautionary and speculative motives) which is inherent in the holding of both debt claims and real assets. We may recognize the uncertainty factor, and view investors' alternatives as follows: one can hold "safe" cash and "unsafe" noncash earning assets like debt claims and real assets. It is a choice between safety on the one hand, and uncertainty but the possibility of gaining future income on the other hand. But if we look at investors' alternatives in this light, whether a lower or higher anticipated rate of return derivable from holding assets stimulates or reduces the desire to purchase new assets depends upon the elasticity of demand for future income in terms of uncertainty bearing. It is still a matter of tastes.

We must conclude therefore that the Keynesian investment theory is either wrong or meaningless. If it is held that taxes or any other force that influences the rate of return has no effect on "the" interest rate—i.e., that "productivity" or the yield of physical assets exerts no influence on "the" rate employed for capitalization purposes—the Keynesian theory implies that the demand for future net income provided from acquiring new assets is elastic. It implies that tax-caused lower rates of return on physical investment must *necessarily* reduce the level of investment spending. Stated in this manner, the theory is wrong. Indeed, the fact that total investment spending has held up remarkably well over periods which have seen heavier asset taxation, especially in the form of higher corporate tax rates, suggests the error of the theory. If the Keynesian investment theory is interpreted in such a way that a reduction of the rate of return induces a shift of the liquidity preference function that simultaneously lowers the interest rate, which would offset the impact of the lower rate of return on investment spending, the "theory" no longer provides an explanation of investment spending. It is meaningless as a "theory" of investment spending. Moreover, if we argue that the liquidity preference function undergoes an offsetting shift everytime there is a change in the rate of return, we are moving very close to an old-fashioned productivity theory of interest-rate determination. The liquidity preference theory of interest-rate determination and the concept of liquidity preference itself ceases to have the explanatory worth its advocates attribute to it.

We present the theory of investor behavior in the framework of "the elasticity of demand for future net income" not because it is especially fruitful, but in order to lay bare the implicit assumptions of current a priori theory. There are perhaps other motives which are as important as the desire to obtain net future income that cause investors to buy new assets. The modern corporation, for example, buys new assets because it must, simply to maintain the "going concern" or its relative position in a growing economy. Many people view "getting rich" and the accumulation of assets as an "end" in itself. Recognition of these motives suggest that, possibly, the "demand for future net income" is inelastic But more important, recognition of these motives indicates that investment analysis must transcend narrow "price mechanics." For the time being, however,

we simply wish to illustrate that if one wishes to argue that taxation reduces investment incentive because it reduces the rate of return, and base his analysis on conventional price analysis, he must demonstrate that the elasticity of demand for future net income is greater than unity. There is no theoretical basis for such an elasticity assumption. Nor does recent experience suggest that heavy asset and business earnings taxation reduce investment incentive. Yet currently popular investment theories, when applied to tax analysis, do imply such questionable outcomes.

IV. THE CONFISCATORY EFFECTS OF ACCELERATED DEPRECIATION

Regardless of the theory of investor behavior and capitalization rate determination we accept, accelerated depreciation with a proportional tax nevertheless has one clear effect. It reduces the value of existing physical assets at the time it is introduced. In this respect, accelerated depreciation and an asset earnings tax is the old-fashioned Single Tax with a vengeance. The proponents of the Single Tax were only interested in taxing discriminately the earnings of non-depreciable assets like land; accelerated depreciation not only attains that goal, but is also extends the Single Tax principle to all existing assets.[11]

In the case of non-depreciable assets such as "land," the impact on capital values of accelerated depreciation is fairly clear. Imposition of a proportional asset earnings tax reduces the net earnings obtainable from non-depreciable assets. Allowance of accelerated depreciation, however, causes the capitalization rate to fall by a smaller proportion than the earnings of old assets. Discounting these earnings with the relatively higher rate lowers their value.

Owners of existing depreciable assets also suffer a capital loss with the introduction of accelerated depreciation. Announcement of accelerated depreciation affords a relative advantage to those who can acquire new assets on the margin of investment. No individual will pay more for an existing asset, which is depreciable at normal rates, unless his necessary money outlay affords a rate of return which equals that obtainable from new assets which are eligible for accelerated depreciation. Hence the values of existing assets will fall to such a level that their purchasers would obtain the same rate of return, after taxes, that they could obtain if they elected to acquire brand-new assets. Holders of existing assets, at the time accelerated depreciation is introduced, should write down the value of their holdings to reflect these market forces. Thus accelerated depreciation attains the goal of the old-fashioned Single Tax on a much broader scale than that envisaged by Henry George and his followers.

V. CONCLUSIONS AND IMPLICATIONS

Many who advocate accelerated depreciation uncritically hold that business taxation reduces the incentive to invest. These incentive forces boil down to the impact of taxation upon the rate of return, and the effect of the rate of return upon the desire to purchase new assets. Business and corporate taxes lower the

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[11] Cf. Earl R. Rolph, *The Theory of Fiscal Economics* (Berkeley: University of California Press, 1954) pp. 279–280.

rate of return from investment; accelerated depreciation under taxation tends to increase the after-tax rate of return. It is not clear, however, whether there is any predictable let alone necessary relationship between the level of the rate of return and the incentive to invest. Just as a generally higher wage rate may not increase the total amount of labor services offered on the market, a generally higher rate of return need not stimulate investment spending. Nor should generally higher taxation necessarily reduce the incentive to acquire new plant and equipment. The exact impact these public policy measures have upon investment incentive is unknown. Yet when we apply the Keynesian investment and interest theory to these issues, we conclude that business taxation necessarily reduces investment incentive; and that accelerated depreciation will stimulate it. The broader theory itself, therefore, appears questionable. Or, at least it requires reformulation.

If it is possible that business taxation need not deter investment incentive, it seems questionable if the government must subsidize new investment spending by permitting accelerated depreciation. To be sure, business taxation reduces the financial means available to the business community for purchasing new assets. In this way it will surely inhibit investment spending. But sources of funds for business spending on new equipment can be augmented through other public policy measures. A general lowering of the overall tax rate, for example, is one mean of effectively increasing business funds. Indeed, the general lowering of tax rates seems a more straight-forward method of reducing tax liabilities and enhancing investors' cash sources than the continual whittling away of the tax base by various special concessions, of which accelerated depreciation is one of the latest. Moreover, accelerated depreciation, due to its "Single Tax" characteristic, is an especially dangerous tax concession to make. To be effective, accelerated depreciation must be introduced only once and tax rates must not be raised in the future. If, for example, in order to recoup tax losses caused by accelerated depreciation the government should increase tax rates on business income, the loss in capital values to owners of existing assets will be even greater. Should legislative behavior cause investors to expect that either tax rates or the permissible rate of depreciation will rise in the future, such action effectively announces to investors that the capital values of assets they now acquire will fall in the future. Full knowledge of this possibility would enormously inhibit investment incentive at any given time. Tax rate or depreciation rate changes under such a system therefore appear positively dangerous. To move gradually from a tax system with normal depreciation to one with higher tax rates but with more liberal depreciation practices would require a degree of sophistry which is neither possible nor desirable in a democratic society if such a program were not to impair investment incentives. On the other hand, tax rate reductions once accelerated depreciation is established would provide unnecessary windfalls to owners of old assets.

Hence, recent changes in the tax laws that permit more liberal depreciation practices have serious and, possibly, unintended implications. For example, it is doubtful if the trade association representatives who have vigorously advo-

cated more liberal depreciation policies for tax purposes actually favor the confiscation of existing capital values. Yet this is what their suggested tax reforms amount to. Presently, the opening wedge for accelerated depreciation by no means goes as far as our illustrative example of expensing new outlays. But should depreciation practices be more liberalized, and should basic tax rates be increased, the old Single Tax scheme becomes more of a reality. To some, this goal may be desirable. It may or may not be necessary to attain the avowed aim of stimulating investment spending and the acquisition of new assets. But it at least seems desirable to recognize clearly all of the consequences of tax changes. Such an effort, in turn, requires a serious re-examination of some of the fundamental elements of investment and capital theory itself. A clear recognition of these fundamental issues may also eliminate some of the controversy that vitiates the discussion of the specific tax measures.

TRUST FUNDS AND NATIONAL OUTPUT

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A new look at the effects of trust fund movements on the level and composition of national output seems long overdue. Trust funds, especially those associated with pension and welfare programs, are becoming increasingly significant in the economy. But the mere bulk of trust funds today is not the only reason why a new analysis is needed. Another reason is that when thinking about the effects of trust fund movements our minds seem prone to run along the narrow groove cut by Keynesian under-employment equilibrium theory, a theory fit for a special situation, but certainly not for all times, and perhaps not at all for the years ahead. Once in the Keynesian groove, we are led to conclude that trust fund accumulation reduces national output but does not affect capital formation.[1] And still further, that *any* attempt by society to save more of a given income is doomed to miserable failure, a corollary of which is that one generation cannot by saving provide for its own future retirement needs.

In this paper we shall try to make clear when Keynesian results can be expected, but also under what conditions other, and far different, results obtain. Though the analysis is quite general, it is most relevant to the accumulation of funds for retirement programs. As a concrete example, also most relevant to public policy, we take the Federal old-age and survivors insurance (OASI) program. But the analysis, and the technique of numerical estimation, will apply to all trust fund movements. Though focused on the effects of fund accumulation, the analysis is perfectly reversible for the effects of trust fund reductions.

I. THE GENERAL ANALYSIS

To illustrate the factors involved, assume that Congress decides to increase contribution (payroll tax) rates under OASI enough to add a given annual amount to that program's trust fund. This will reduce the disposable income of contributors[2] and decrease their purchases of goods and services. The amount by which contributors decrease their purchases as the proximate result[3] of the higher contribution rates we shall call the "impact" of those rates. Further reductions in purchases and output, in accordance with the (reverse) "multiplier" process, may also follow. But the trust fund must in turn increase its purchases of Federal obligations, and this will increase the supply of loanable funds and

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[1] See, for example, Alvin H. Hansen, *Full Recovery or Stagnation* (N. Y., 1938), pp. 188–192.

[2] We define contributors to be those who bear the incidence of the increased contribution rates, not necessarily those who remit the proceeds to the Treasury.

[3] "Proximate result" here means the result of the incidence of the higher rates as distinguished from the more remote "multiplier" or other repercussions that flow from such reduced purchases.

tend to reduce the effective rate of interest, which might later increase the rate of capital formation — a counter-multiplier process.

The forces just mentioned, as they work themselves out, will largely determine the effect of the trust fund accretion on national output, real consumption and investment. The model representing these forces can be shown quite simply once the role that government plays in the analysis is made explicit. (1) With respect to fiscal policy, we assume that neither *general* Federal tax rates nor planned expenditures are affected by trust fund movements. (2) With respect to monetary policy, we assume that neither the amounts nor the general composition of Federal Reserve assets and of the "working balance" of the Treasury's general fund are affected by trust fund movements. When the analysis based on these assumptions is completed, the limitations and effects of other government behavior are easy to see.

Our model, expressing equilibrium conditions, may now be set forth as follows:

$$(1) \qquad\qquad S(Y) - I(r) = -a$$

$$(2) \qquad\qquad L(Y, r) = M.$$

The first equation expresses the condition that saving as a function of national income, Y, be equal to investment as a function of the rate of interest, r, where "a" is a parameter which changes the saving schedule relative to the investment schedule.[4] Equation (2) expresses the equilibrium condition that the demand for money as a function of national income and the rate of interest be equal to the supply of money, M, as determined by Federal authorities. Our model also implicitly assumes the usual identities: national income equals consumption plus investment, and saving equals national income less consumption. An increase in OASI contributions, and the trust fund, reduces consumption out of a given national income, and hence shifts the saving schedule upward, this being equivalent to an increase in the parameter "a."

This may be presented graphically in a form set forth by J. R. Hicks,[5] shown in Figure I, where Y is on the horizontal axis and r is on the vertical axis. *LM* represents the general shape of equation (2).[6] As r falls the demand for money increases, so that the fixed supply of money can be equal to the demand for money only at a lower level of Y, where the demand for money for income (transactions) purposes is reduced. Further reductions in r below a certain level in-

[4] The rate of interest could have been included in the saving function, but since the influence of interest rates on saving is generally thought to be uncertain and small, the rate of interest was omitted for the sake of simplicity. Also, income, or the rate of change of income, could have been included in the investment function, incorporating the "acceleration principle" into the model. But the "acceleration principle" is not clearly applicable in the short run. (See A. F. Burns, *The Frontiers of Economic Knowledge* [Princeton, 1954], pp. 236–67.) And for this analysis, that principle is obviously insignificant in the long run.

[5] "Mr. Keynes and the 'Classics'; A Suggested Interpretation," *Econometrica*, 1937, V, pp. 147–159. Reprinted in *Readings in the Theory of Income Distribution* (Philadelphia, 1946).

[6] The slope is positive, since here $dr/dY = -L_Y/L_r$, (where the subscripts represent partial derivatives), L_Y being positive and L_r being negative in sign.
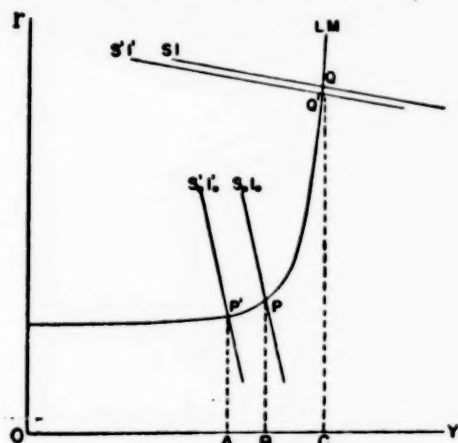
Fig. 1

crease the demand for money greatly, so that large reductions in Y are necessary to equate the demand for and the supply of money; this sets a lower limit to r. The response of the demand for money to changes in national income can be taken to have a small range; therefore, the almost-vertical portion of LM represents a very weak response of the demand for money to changes in r, and the almost-horizontal portion represents a very strong response of the demand for money to changes in r.

Let the SI curve represent those combinations of r and Y at which saving equals investment, as indicated by equation (1).[7] As r falls, investment will increase, so that an increase in national income is necessary to increase saving and bring it into equality with the larger level of investment. Full equilibrium is attained only when both equations are satisfied, that is, at point Q, and at income OC.

An increase in OASI contribution rates, and in the trust fund, increasing "a" in equation (1), shifts the saving schedule upward relative to the investment schedule. Graphically, in Figure I, this trust fund increase represents a shift of the SI curve to the left and down to a new position represented, for example, by SI'. This shift means that at any given level of r, Y must be reduced until, with the higher saving schedule, the level of saving is lowered again to the (fixed) level of investment. Alternatively, at any given level of Y, r must now be reduced enough to increase investment until it equals the higher schedule of saving. The new equilibrium point is Q', income being reduced to a level slightly less than OC.

This graphic presentation illustrates clearly the results of a trust fund increase under different economic situations. Assume that equilibrium is estab-

[7] The slope of the SI curve is negative, since here $dr/dY = (S'(Y))/(I'(r))$, the sign of $S'(Y)$ being positive, and the sign of $I'(r)$ being negative.

lished at P under conditions represented by the saving-investment curve, S_0I_0. The same trust fund increase that shifted the SI curve to $S'I'$ will shift the S_0I_0 curve to $S_0'I_0'$. Here the trust fund increase will move the equilibrium point from P to P', causing a relatively large income reduction, from OB to OA. Now it is easy to see that under either of two conditions national income will be reduced and investment will not be affected by a trust fund increase—and either condition is a Keynesian under-employment equilibrium trap: (1) where the SI and LM curves intersect in the almost-horizontal area of the LM curve—here r has reached its minimum, and a trust fund increase cannot stimulate investment by reducing r further; (2) where the SI curve is almost vertical, indicating a very low response of investment to change in r—here even a small increase in the trust fund will shift the SI curve relatively far to the left, reducing Y greatly, and may reduce r considerably without causing any appreciable increase in investment. Under either of these conditions the ordinary multiplier analysis does apply.

However, under any other conditions trust fund increases will reduce national income relatively little and will increase investment. For example, where the SI curve is almost horizontal and intersects the LM curve at some point above its almost-horizontal area, an increase in the trust fund will not reduce Y appreciably, but will increase investment considerably. The peak strength of the counter-multiplier process is reached where an almost-horizontal SI curve intersects the LM curve in its almost-vertical area. Here all of the "impact" of a trust fund increase, mentioned earlier, will find its way into investment, and income will not be reduced at all, but in the long run will be increased because of the productivity of the larger stock of capital. Under these conditions, attempts to save are not doomed to failure.

This general analysis can best be summarized by defining the "trust fund multiplier" and evaluating it in terms of our model. We define the trust fund multiplier as the change in the trust fund divided into the resulting change in national income which it generates; this, in infinitesimals, is dY/d(trust fund). In terms of our model this consists of the product of two parts: $(da/d$(trust fund)$) \cdot (dY/da)$. In this context da is the impact of a change in the trust fund, and da/d(trust fund) is what we shall define as the "impact coefficient"—the ratio of the impact to the change in the trust fund, which for OASI is numerically equal to the marginal propensity to consume of contributors as a group.[8] dY/da is the ordinary, or "investment," multiplier.

[8] A decrease in consumption out of a given income is identically an increase in saving out of a given income. Thus da can be interpreted either as an increase in saving, or a decrease in consumption, out of a given income.

The idea that the impact coefficient is equal to the marginal propensity to consume of contributors involves the assumption that only current contribution rates, and not scheduled future contribution rates, affect the current consumption expenditures of contributors. This assumption seems justified for two reasons: (1) The vast majority of contributors do not know the schedule of future contribution rates. (2) Those contributors who do know this schedule cannot count on it with certainty, for, unrelated to any change in benefit rates, Congress has often modified the schedule of future contribution rates.

To evaluate dY/da in our model we differentiate equations (1) and (2) totally with respect to "a" and solve the resulting linear equations for dY/da. We find that

$$(3) \qquad \frac{dY}{da} = - \frac{1}{S'(Y) + \dfrac{I'(r)}{L_r} L_Y}$$

where the primes indicate derivatives and the subscripts indicate partial derivatives. $S'(Y)$ is the marginal propensity to save, $I'(r)$ indicates the response of demand for investment to change in the rate of interest, L_r indicates the response of demand for money to change in the rate of interest, and L_Y indicates the response of the demand for money to change in national income. If the interest response of investment demand is very weak relative to the interest response of demand for money—i.e., if $(I'(r))/L_r$ is very small—we are in the Keynesian underemployment equilibrium trap, where only the multiplier analysis is applicable to trust fund changes: except for $S'(Y)$, all terms drop out in the denominator of the right member of (3), which reduces to $-1/(S'(Y))$, the familiar investment multiplier formula. And the trust fund multiplier becomes $-1/(S'(Y)) \cdot da/d$(trust fund)—the reciprocal of the marginal propensity to save times the impact coefficient, with negative sign.

If the interest response of demand for investment, however, is very strong relative to the interest response of demand for money—i.e., if $I'(r)/L_r$ is very large—the counter-multiplier process is very strong, and (3), and hence the trust fund multiplier, becomes negligibly small. Trust fund accumulation increases real saving and investment by the full amount of the impact, and does not reduce real national income.

Thus far we have implicitly assumed that changes in money national income and in real national income (output) have been the same. The usual assumption of effective resistance to wage and price reduction has been made, so that a reduction in money income following a trust fund increase reduces output proportionately. When inflationary conditions exist and the counter-multiplier process is very strong, an increase in the trust fund increases saving and investment in line with the analysis already given, but does not appreciably reduce inflationary pressures. However, if inflationary pressures happen to be great when $(I'(r))/L_r$ is very small, a trust fund increase could reduce these pressures, keep the price level down, and, without reducing output, increase real saving and investment. Looking back at Figure I, assume that OA is the full-employment level of income, that the saving-investment equation is $S_0'I_0'$, and that equilibrium is established at point P'. Now assume that for some reason the demand for investment increases and the saving-investment curve shifts to S_0I_0. The new equilibrium point, P, is established only at the cost of price inflation, the increase in Y, equal to AB, being wholly the result of an increase in the price level. But if simultaneously with the increase in investment demand, enough of a trust fund increase occurred to keep the saving-investment curve at $S_0'I_0'$, there would be no inflation. National income would remain at OA, but

real saving and investment would increase. If there had been no trust fund increase, investment goods and consumption goods would have competed with each other for men and materials, raising prices. Production plans for neither could have been completely realized. But the trust fund increase reduces consumption and releases men and materials for investment goods production, so that real investment can be carried out as planned.

II. PRACTICAL APPLICATIONS

As a practical matter, and especially for public policy, what does the foregoing analysis mean? It means simply that before knowing what effects on national output, investment, and consumption will flow from trust fund movements, we must know the economic conditions under which such trust fund movements will occur. If these conditions are judged to be those of the Keynesian under-employment equilibrium trap, then the traditional multiplier analysis will give us the answer. For such conditions we have made estimates of the OASI trust fund multiplier, and considered those of private pension plans—to be presented later on. But fortunately the economy does not always operate under the conditions to which ordinary multiplier analysis is applicable. I believe, for example, that in 1956 and early 1957 the counter-multiplier process was very strong. A brief look at this period will introduce us to the more general topic of the usual strength of the counter-multiplier process.

Strength of the Counter-Multiplier Process

In 1956–early 1957 the Federal Reserve was operating independently of the Treasury Department and was holding a fairly tight lid on the money supply. The rate of interest had risen, but the *effective* rate had risen much more, for banks also raised their customer credit standards, which in itself gave them a larger net return on their loans. Some companies had to curtail planned investment expenditures because the money was simply not available; and in early 1957 the newspapers began reporting that others, including some large firms, had postponed planned investment expenditures because of the high borrowing rates. Some local governments postponed construction projects because of the high borrowing rates, while others were priced out of the market because of statutory ceilings on the rates they could pay. Now in this situation assume that OASI contribution rates had been increased enough to increase the trust fund by $1.00 billion a year. Holders of the Federal debt, other than the trust fund, would have held $1.00 billion a year less of it than they would otherwise have held—assuming, of course, that the trust fund increase had caused no change in other general Federal tax rates or expenditures. Interest rates being what they were, there would have been little incentive to keep the money received in exchange for the debt idle, and so it would have been put on the market for investment return. Assuming the marginal propensity to consume of OASI contributors, or the "impact coefficient," to be .9, we can see that the net increase in loanable funds would have been only $.90 billion, for the contributors would have drawn on funds at the rate of $.10 billion a year as a result of their reduc-

tion in disposable income. Parts of the $.90 billion would have gone initially to many places, but the final result would have been as though it had all been used to buy new corporate debt issues, reducing demand for bank loans by these companies, so that banks could have and would have lent the money to customers who would have used it for capital investment projects that they could not otherwise have carried through for lack of funds or, if you like, because of the high effective rate of interest.[9] $.90 billion worth of additional real saving and investment per year would have resulted from the increase in the OASI trust fund.

However, if interest rates had been considerably lower in that period, much of the money assumed to have been released by the trust fund purchase of Federal debt may not have been put on the market but instead may have piled up in idle balances. Because the strength of the counter-multiplier process varies directly with the ratio of interest response of investment demand to interest response of demand for money, good judgment on the strength, or expected future strength, of the counter-multiplier process requires a general consideration of the relation of the demand for money, on the one hand, and the demand for investment, on the other, to the rate of interest. Some contribution to good judgment on this question may be made by a brief consideration of these two demands.

The Demand for Money and the Rate of Interest

The chief issue here is quantitative. At what level of interest rates does the interest elasticity of demand for money become very large? In order to make estimates, we must first make certain simplifying assumptions. We let the long-term, high-grade bond yield represent "the rate of interest." Changes in trust funds should have their greatest effects in the long-term money market. Furthermore, for our analysis "the rate of interest" is an index not only of the cost of using money for the purpose of capital formation, but also of the opportunity

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[9] To shed light on our assumption throughout the analysis that trust fund movements do not affect basic monetary policy, it might be helpful at this point to consider a special case—one in which the trust funds accumulated are used to purchase outstanding Federal obligations held by the commercial banks. With basic monetary policy unchanged, the result would be the same as that just given—the banks could use their increased lending power, for example, to make loans for business capital spending. However, if the trust fund increase induced the Treasury, in the transactions involving OASI tax collections and bond purchases, to shift the proportions of its "working balance" between commercial banks and the federal reserve banks, it would lead to a multiple contraction or expansion of commercial bank credit; but this would mean that the trust fund increase caused a change in monetary policy. Under conditions of a strong counter-multiplier process, which were assumed in this case, the Federal Reserve could also offset or accentuate the effects of trust fund movements. But our provisional assumption that basic monetary policy not be affected by trust fund movements seems reasonable, after all: For if the conditions of the Keynesian under-employment equilibrium trap prevail, monetary policy obviously cannot offset the effects of trust fund movements; only fiscal policy can. If, on the other hand, the counter-multiplier process is strong, there is normally no need to offset the effects of trust fund movements because these effects are neither inflationary nor deflationary.

cost of liquid holdings. Yield on long-term bonds seems to be the closest single approximation to such an index. We assume that the total stock of money (currency and demand deposits) held by the public is held for transactions, on the one hand, or is held idle, on the other, in the speculation that the rate of interest is low and will rise. We assume that transactions balances are positively and linearly related to national income, and that idle or speculative balances vary inversely with the rate of interest, increasing rapidly as the latter approaches some asymptotic lower limit above zero.[10] Finally, we assume that the demand for money is equal, without significant time lag, to the supply of money as determined by the monetary authorities.

These considerations indicate the following type of money demand function:

$$(4) \qquad M = a + bY + c/(r - d)$$

where M is money (in billions of dollars), Y is national income (in billions of dollars), r is yield on long-term, high-grade bonds (in percentage terms), and a, b, c and d are parameters to be determined by the data. A least squares fit of the data for the years 1900–1954 gives the function:[11]

$$(5) \qquad M = -6.61 + .40Y - 5.53/(r - 2.40).$$

The (partial) elasticity of demand for money is

$$\frac{5.53}{(r - 2.40)^2} \cdot \frac{r}{-6.61 + .40Y + \dfrac{5.53}{r - 2.40}} \cdot$$

Assuming Y to be at its 1954 level of 300, we can evaluate the above elasticity

[10] See J. M. Keynes, *The General Theory of Employment, Interest and Money* (N. Y., 1936), Chap. 13. We lump balances held for Keynes' precautionary motive in with the transactions balances. Although the demand for transactions balances can also be expected to vary inversely with the rate of interest, we believe that this relationship is small enough to be neglected. While we define money as currency and demand deposits held by the public, the demand for idle money by commercial banks, represented by "excess reserves," and its relation to interest rates is also relevant in this connection because the banks also have a choice between holding income-yielding assets and money. However, in the period for which data are available, 1929 to date, there appears to be no significant relationship between the rate of interest and the excess reserves of the member banks of the Federal Reserve System.

[11] Data on national money income for 1929–54 are those of the Department of Commerce, and data for 1900–1928 are those of Robert F. Martin, *National Income in the United States, 1799–1938* (N. Y., 1939), Table 1, pp. 6–7, adjusted to the level of Commerce data. "Money" is demand deposits in all banks, other than inter-bank and United States Government, less items in the process of collection, plus currency outside banks, as of June call dates. Data on money for 1900–1941 are from Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics* (Washington, 1943), Table 9, and for 1942–54, from current issues of the *Federal Reserve Bulletin*. Yields on long-term bonds for 1900–36 are annual averages of yields on high-grade railroad bonds from *Banking and Monetary Statistics*, Table 132, and for 1937–54 are annual averages of Moody's Corporate Aaa bonds from *ibid*, Table 128, and current issues of the *Federal Reserve Bulletin*. For equation (5), the index of correlation, adjusted for sample size, was .994; the coefficient of partial correlation for bond yield was .848.

at various rates of interest. At an interest rate of 4 per cent, the elasticity is very low, $-.065$; at 3 per cent it is only $-.369$. At 2.53 per cent, the lowest level that the "rate of interest" reached (1946), the elasticity is -5.30. From there it goes rapidly toward infinity as we project the rate of interest toward its computed asymptotic lower limit of 2.40 per cent. It seems reasonable to conclude from these results that when the yield on long-term, high-grade bonds is in the neighborhood of, or above, 3 per cent, there will be no appreciable tendency to begin holding idle balances as new money from trust funds is thrown on the market, tending to reduce rates of interest. If in that range of interest rates investment demand is fairly sensitive to the new funds or the lower rate of interest, the counter-multiplier process will probably be very strong.

The Demand for Investment and the Rate of Interest

The bulk of accepted economic theory before the 1930's assumed that investment was quite sensitive to changes in the rate of interest.[12] But in the 1930's some economists began to question this assumption. This questioning attitude was perhaps basically due to the ineffectiveness of interest rate policy in the deep depression of that period, but it was also due in part to the results of several surveys of the opinions of businessmen. These surveys have recently been reviewed by W. H. White.[13] His finding, in which this writer concurs, was that the defects of these surveys were so great that no definite conclusions could be drawn from them.

In his aggregative statistical study, Tinbergen found very little influence of interest rates on total investment in the United States, which is what we would expect from such a correlation study, but he did find that the rate of interest had an important influence on investment in railroad rolling stock in this country.[14] Lawrence R. Klein has recently made two studies[15] which show a

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[12] The quantity theory of money was necessarily based on this assumption, as is best illustrated by the monetary writings of Alfred Marshall (see, e. g., *Official Papers of Alfred Marshall*, pp. 32–41). This can also be seen by noting that in our model

$$\frac{dY}{dM} = \frac{1}{L_Y + S'(Y) \dfrac{L_r}{I'(r)}}.$$

If $I'(r)$ is large relative to L_r the right member reduces to $1/L_Y$, which is the V in the money equation $MV = PQ$. Even J. M. Keynes, after he wrote his *General Theory*, thought investment was sensitive to interest rate changes (see L. R. Klein, *The Keynesian Revolution*, pp. 66–67). Milton Friedman argues for the validity of the quantity theory as an explanation of the great price increases in the United States in connection with the Civil War, World War I, and World War II (*American Economic Review: Papers and Proceedings*, May 1952, pp. 612–625).

[13] "Interest Inelasticity of Investment Demand," *American Economic Review*, September 1956.

[14] J. Tinbergen, *Statistical Testing of Business-Cycle Theories I: A Method and Its Application to Investment* (Geneva, 1939), pp. 53–55 and 127.

[15] "Studies in Investment Behavior" in *Conference on Business Cycles* (N. Y.: National Bureau of Economic Research, 1951).

significant relationship between long-term interest rates and investment in rail-roads and in electric light and power. The interest elasticity of demand for investment in railroads was $-.73$ at the point of means, and in electric light and power it was -2.79. These results are in line with what we would expect on theoretical grounds: the interest elasticity of demand for investment is relatively large for industries or enterprises whose assets are heavily weighted with durable capital goods.

It seems fair to conclude that, except in times of prevailing uncertainty or low confidence in the future such as existed in the 1930's, the force of the counter-multiplier process is reasonably strong. Certainly, the ability of monetary policy to regulate the economy by control of the money supply requires the same conditions under which the strength of the counter-multiplier process will be great.[16] The historical ability of the economy to transmit decisions to save—of which trust fund increases are likely to be examples—into real investment suggests that the counter-multiplier process may normally be strong enough to nullify the multiplier process. The economy does seem to have, over the long pull, an effective tendency to absorb savings into investment. Otherwise effective utilization of the nation's labor supply in the past would have depended either on a conscious "full employment" policy or on the haphazard factors that determine "exogenous" investment—technological change, population shifts, and so on. That the economy has, decade after decade, absorbed into productive employment the overwhelming majority of the rapidly increasing population who have wanted to work cannot be seriously doubted. Nor can their absorption be attributed to a conscious government "full emplyment" policy. That it can be due to "exogenous" investment alone seems unlikely purely as a matter of chance. These considerations support the view that the counter-multiplier force has been strong over the long-run past. With long-term, high-grade bond yields above 3 per cent, there seems to be no reason why it should not be equally strong in the future.

Trust Fund Multiplier Estimates

We shall now present our estimates of trust fund multipliers for those times when multiplier analysis is applicable. The formula already given for the trust fund multiplier is in the form useful for estimating: $-[da/d(\text{trust fund}) \cdot 1/(S'(Y))]$, or (impact coefficient) $\times$ (marginal propensity to save), where the impact coefficient takes negative sign for trust fund increments and positive sign for decrements. Considerable effort was expended to make these estimates, but space limitations permit us to give the results only in very summary form. Because even where applicable to trust fund movements, multiplier analysis is of interest chiefly for short-run effects, the conditions underlying our estimates are assumed to be those of the short run—say, those existing within a three-year period after an assumed trust fund change. Data used, with few exceptions, were those of the Department of Commerce available in the *Survey of Current Business*, deflated to constant dollars, and fitted in

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[16] Thus only if $L_w/(I'(r))$ is small can dY/dM be large (see fn. 12).

linear equations by the least squares method. In estimating both the impact coefficient and the marginal propensity to save, a consumption function of the Duesenberry-Modigliani type was utilized, and found to be as follows:

$$(6) \qquad\qquad C = \$41 + .80Y^d + .11Y_0^d$$

where C is the current year's consumption, Y^d is the current year's disposable income, and Y_0^d is the highest disposable income in a previous year, all in terms of dollars of 1954 purchasing power and on a per capita basis.[17]

The impact coefficient for OASI is the marginal propensity to consume out of disposable income of contributors under the program, which is somewhat higher that the marginal propensity to consume of all consumers as indicated in equation (6) because contributors have below-average incomes. While in the case of the employer's half of the contribution (payroll tax), the question of incidence is involved, for any one of several reasonable assumptions about incidence, the impact coefficient for the employer's contribution works out at about the same value as for the employee's contribution. Our result is that the OASI contributor's marginal propensity to consume is 3 "points" higher than that of all consumers. Equation (6) indicates that for all consumers the marginal propensity to consume is .80 when current income is below some previous high, and about .91 when current income is above some previous high. Hence the impact coefficient of an OASI trust fund change is .83 and .94 in these two different situations respectively.

The marginal propensity to save, defined with respect to a change in net national product, is simply $1/(1-(\Delta C/\Delta Y))$, where C is consumption, Y is net national product, and Δ is an increment or a decrement. For an increase in net national product, the marginal propensity to save is the ratio of all the "leakages," such as taxes and corporation and personal saving, to the increase in net national product. Our study indicates that, under present tax and other institutional conditions, for every \$100 increase in net national product, the short-run "leakages" are as follows:[18] indirect business taxes increase by \$5, social insurance and related contributions increase by \$3, corporate taxes increase by a thumping \$12, retained corporate profits increase by \$10, personal taxes increase by \$10, and transfer payments *decrease* by \$15. Up to this point the leakages add up to \$55. The consumer thus gets only \$45.[19] If disposable income is below some previous high the consumer will save 20 per cent of what he gets (as indicated in equation (6)), or \$9. In this case the total leakages are \$64, and the marginal propensity to save is .64. If disposable income is above some previous high, the consumer will save only 9 per cent, or \$4. In this case the total leakages are \$59, and the marginal propensity to save is .59.

[17] Data were for the years 1923–1940 and 1947 to 1954. Basic data for the 1920's were developed by Harold Barger. The coefficient of multiple correlation was .997.

[18] For each \$100 decrease in net national product the "leakages" are the same size, but with reversed sign.

[19] For 1948, when tax rates and transfer payments were lower, Arthur Smithies got a corresponding figure of \$60 ("Keynesian Economics: The Propensity to Consume and the Multiplier," *American Economic Review*, May 1948, pp. 298–310).

The OASI trust fund multipliers are as follows in two different situations. Where disposable income is below some previous high, the trust fund multiplier is .83/.64, or 1.29. Where disposable income is above some previous high, the multiplier is .94/.59, or 1.59. These are "ultimate" multipliers, in the sense that they imply an infinitely long adjustment period after the impact of a trust fund change in order to reach the limiting values just given. Actually, over the short run they would be somewhat lower—about 10 to 15 per cent lower on the average for a two-year period following a trust fund change. These figures indicate that where multiplier analysis is applicable, a $1.00 billion per year increase in the OASI trust fund would reduce output no more than $1.59 billion per year and as little as $1.15 billion per year on the average over a two-year period following the trust fund increase.

Even larger than trust fund growth under OASI is fund accumulation under private industrial pension plans. Fund growth under these plans is estimated at about $3.5 billion in 1955, compared with $1.1 billion under OASI. The only estimate remaining for the trust fund multiplier under these plans is that of the impact coefficient. The data are not available for making such an estimate, or for such estimates, since the impact coefficient will vary from plan to plan. About the only statement we can make is that the impact coefficient, and hence the trust fund multiplier, will generally be numerically lower under the industrial pension plans than under OASI. This is so because an increase in individual benefit rights of persons under these plans is almost inevitably associated with the growth of industrial pension funds, and such benefit rights tend to increase current consumption and offset in some degree the reduction in consumption caused by the collection of such funds. In contrast, OASI is doing little more than operating on a pay-as-you-go basis—is far short of "full reserve" financing; consequently, contribution rates could increase considerably and the trust fund could increase many billions of dollars without implying any increase in the benefit rights of individuals under the program.

III. CONCLUSIONS

Only under the conditions of the Keynesian under-employment equilibrium trap is ordinary multiplier analysis applicable to estimates of the effects of trust fund movements on national output, investment and consumption. For conditions of low business confidence or very low interest rates, where multiplier analysis is applicable, the old-age and survivors insurance trust fund multiplier is numerically no higher that 1.59 and averages as low as 1.15 over the two years following a trust fund increase. Trust fund multipliers for industrial pension plans are even lower than for OASI. Where multiplier analysis is applicable, trust fund accumulation does not affect capital formation—if, as usual, there are no inflationary pressures.

Under conditions of high business confidence and moderately high interest rates, the counter-multiplier process is effective: trust fund accumulation increases real saving and investment, and because of the increase in the stock of capital, also increases output in the long run. When inflationary pressures exist,

even under conditions ordinarily associated with the Keynesian under-employment equilibrium trap, these results also obtain.

Under the first set of conditions the main effect of trust fund accumulation is to reduce output without affecting investment. Under the second set, the main effect is to increase investment. The prevalent view of the effects of trust fund accumulation has been to accept the result of the first set of conditions, though strangely enough not always the conditions themselves. There seems to be a growing belief that the second set is the most realistic for the future. In one issue of the *Commercial and Financial Chronicle* (May 10, 1956), for example, the following views were expressed: Under-Secretary of the Treasury, W. Randolph Burgess, said: "Economic events in the United States in the past year . . . give evidence that for its long-term growth the country needs a higher rate of saving" (p. 6). Sumner H. Slichter said:

It is very doubtful whether we shall be able to increase our savings fast enough to finance the profitable investment plans that our rapidly growing staff of technologists is able to turn out. The problem confronting the economy is exactly the opposite to that envisaged by Keynes and the school of economic stagnationists (p. 29).

If these views are correct, the most important conclusion of this analysis is that it is now economically possible for a generation by saving to provide for its own future retirement needs.

POPULATION AND ECONOMIC DEVELOPMENT
IN LATIN AMERICA

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The notion that only the lack of people obstructs the fruitful exploitation of land and rich natural resources is almost as old as the colonies which Spain and Portugal established in the New World. The degree of implausibility, if not irresponsibility, that creeps into the argument may be illustrated by the claim that Brazil, whose population has just turned 60 million, could "comfortably support as many as 600,000,000 people."[1] If economic development means anything beyond the mere avoidance of endemic hunger, the problems associated with population growth are no less pressing in Latin America than in other world areas.

Latin America comprises twenty countries, which, in many respects, are as dissimilar as any group of twenty states in the United States. Only three countries—Argentina, Brazil, and Mexico—have more inhabitants than our most populous state. Panama, the smallest country, has about the same population as the District of Columbia. Several nations are approximately equal in area, or population, or both, to individual states of the Union. Brazil, though slightly larger in area than our forty-eight states, has only a little over one third of their population.

The quality of demographic data varies from country to country almost as much as climate, topography, and levels of social and economic development. Thanks in part to training programs of the United States Bureau of the Census, Latin America has competent vital statisticians; but they ply their craft, often under incredible obstacles, with varying degrees of effectiveness. In countries like Peru, where geographical and cultural barriers isolate the large indigenous elements of the population, natality and mortality, to say nothing of nuptuality and morbidity, remain in the statistician's wonderland of informed guesswork.

All the estimates, such as they are, lead to the conclusion that Latin America *as an area* is characterized by high birth rates, declining death rates, and increasing rates of population growth. But this is not uniformly true of the twenty republics. In 1950–1955 crude death rates in South America ranged from a low of 8.3 per thousand in Uruguay to 19.5 to Bolivia. Infant mortality reached a peak of 146.3 per thousand in Bolivia but was only 41.4 in Uruguay. The crude birth rate ran from 20.9 per thousand in Uruguay to 48.8 in Ecuador, while the complete expectation of life went from 44.1 years in Brazil to 66.3 years in Uruguay. Finally, the rates of natural increase exceeded 3 per cent per annum in Ecuador, Peru, Venezuela, and Paraguay but fell to 1.8 per cent in Chile, 1.6 per cent in

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[1] *South American Journal*, Vol. CXXXV (1944), p. 257.

Argentina, and only 1.3 per cent in Uruguay.[2] In many cases, of course, the net rate of increase was significantly affected by migration, especially immigration.

Two reports of the United Nations Bureau of Social Affairs are devoted to population projections for South America, Central America, and Mexico in 1950–1980.[3] The research was carried out "in implementation of the Population Commission's request to undertake work on population projections, 'paying special attention to the need for such projections for under-developed countries, as aids in the planning of their economic and social development programmes'." Although they assumed that, during the next quarter century, birth rates will commence to decline and death rates will continue to fall, the demographers could not predict the respective changes in the two rates. For each country they furnish three projections labeled, like switches on an electric range, "high," "low," and "medium." The high estimate gives South America a population of 239 million in 1980, an increase of 117 per cent. The medium estimate places the increase at 102 per cent, and the low, at 88 per cent. The population of Central America and Mexico, estimated at 34 million in 1950, will reach 86 million, or 250 per cent of the 1950 figure, if the "high" rate of increase prevails. Which estimate proves to be valid depends upon the rate of economic change, but it is equally true that demographic experience will have an important bearing on economic growth.

All Latin-American nations fit roughly into the ranks of underdeveloped countries, although their stages of development vary widely. Schultz calls nine countries *very poor*: Bolivia, Ecuador, Paraguay, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, and Nicaragua. Six are *not nearly so poor*: Brazil, Colombia, Costa Rica, Mexico, Panama, and Peru. Finally, five are *comparatively well to do*: Argentina, Chile, Cuba, Uruguay, and Venezuela.[4]

National income estimates are, with few exceptions, unreliable; but the range of per capita income probably runs from less than $100 in Haiti to over $500 in Venezuela. More important than the absolute level of national incomes is the rate of increase of income, or gross national product, as compared with the rate of population increase. For Mexico the International Bank has given us one of the most thorough studies of income and population growth over a twelve-year period. In 1939–1950 Mexico's net domestic product expanded at the rate of 7.2 per cent annually while population grew at less than 3 per cent, providing an increase of real income per capita of about 4.5 per cent per annum. This was by all accounts a phenomenal achievement, and the Working Party which wrote the Bank's report cautioned that the rate of growth in output could hardly be

[2] United Nations, Population Studies, No. 21, *Future Population Estimates by Sex and Age: Report II. The Population of South America, 1950–1980* (New York, 1955), pp. 41–49.

[3] Population Studies, No. 16, *Future Population Estimates by Sex and Age: Report I, The Population of Central America (including Mexico), 1950–1980* (New York, 1954); and *Report II* (note 1, supra).

[4] T. W. Schultz, *The Economic Test in Latin America* (New York State School of Industrial and Labor Relations, Bulletin no. 35, Ithaca, 1956), pp. 4–5. Schultz includes Puerto Rico among the comparatively well-to-do countries.

maintained throughout the present decade.[5] Despite feverish attempts to speed up Argentina's industrial revolution during the Perón regime, per capita real income rose only 20 per cent between 1943 and 1955.[6]

Every Latin American government has established planning commissions, development corporations and banks, and other state agencies to promote economic growth. Population management rarely occupies a prominent place in development plans, and in some cases the demographic problem in economic growth is practically ignored. In an exhaustive survey of the Chilean economy sponsored by the Production Development Corporation, Juan Crocco Ferrari defines optimum population as one leading to "the best and highest output per capita, as well as the best distribution of the output among the inhabitants."[7] The definition is equivocal; so, too, is the evidence Crocco offers for the conclusion that Chile is underpopulated. "It is evident," he says, "that there still exist in the country unexploited natural resources; that numerous productive factors can be better utilized; that the country can be more capital-using (*capitalizado*); that it is possible for the population to make a better choice of its activities, perfect its work habits, acquire new technical knowledge and greater learning; and that, probably, the realization of these ends can be facilitated by a natural or a migratory increase in the number of inhabitants." Industrialization, urbanization, and the diffusion of education have already induced the voluntary limitation of family size. But Crocco fears the unfavorable consequences, believing that, as the birth rate falls, the number entering the labor force will fall short of the losses through death and retirement.[8] He does not, apparently, appreciate that *without* a change in fertility, the reduction of mortality rates "will have the effect of increasing the numbers of survivors in all age groups, adults and children alike, and unless there is a concomitant increase in the capacity to invest, the result will be to reduce investment *per capita* when the community as a whole is considered."[9]

In a comprehensive study of Mexican demography Durán Ochoa calls for the abandonment of the policy, set forth in the General Population Law, of stimulating population growth by inducements to high fertility and immigration. The birth rate, he asserts, should be "the result of the free play of economic and social forces." Perhaps too guardedly, Durán endorses "various opinions to the effect that demographic congestion in urban areas, the impoverishment of the

[5] International Bank for Reconstruction and Development, The *Economic Development of Mexico* (Baltimore, 1953), pp. 3–18.

[6] Raúl Prébisch, *Informe preliminar acerca de la situación económica* (Buenos Aires, 1955), pp. 15–16. Preliminary estimates show a high (in 1950 prices) of 4,041 pesos per capita in 1948. Thereafter, income declined to an estimated 3,588 pesos in 1955, or 20 per cent above the 1943 estimate of 2,991 pesos.

[7] Fundación Pedro Aguirre (Corporación de Formento de la Producción), *Geografía económica de Chile* (2 Vols., Santiago, 1950), Vol. II, p. 112.

[8] *Ibid.*, pp. 111, 132–133. The decline in fertility under the influences of urbanization, industrialization, and the "desire for material well-being" is also noted in a United Nations report, "Immigration in Chile" (E/CM. 12/169/Add. 2. 1950).

[9] United Nations, *Proceedings of the World Population Conference: Summary Report* (New York, 1955), p. 118.

great rural masses, the high levels of unemployment and underemployment, the insufficiency of cultivable land to support the pressure of the heavy excess of farmers who annually go to swell the ranks of the population engaged in agriculture, the continual exodus of laborers in search of work abroad, and other economic and social disturbances, aggravated in recent times, are indications that the country is beginning to manifest grave symptoms of overpopulation."[10] While national income has continued to grow, the rate of increase in "general productivity" has commenced to decline.

A Peruvian agronomist, González Tafur, has examined the prospects for increasing the food supply for a population which, at the present rate of increase, will double before the year 2000. He explores the opportunities for expanding the area under cultivation, mainly through irrigation, but expresses the hope that "before that year [arrives] the population of Peru may have controlled natality somewhat, owing to the influence of a certain degree of industrialization and the full understanding of the utilization of the resources of the country and their limitation."[11] He has no further comment on the mechanism of declining fertility and fails to observe that industrialization, as many demographers have pointed out, does not surely or automatically reduce population pressure.[12]

The "certain saturation" of population, Audera believes, characterizes parts of Central America. Specifically, Costa Rica, Honduras, and Nicaragua are identified as countries in which "increments of population generally are not compensated by similar increases in the production of food."[13] While it is refreshing to find the recognition that the law of diminishing returns has not been repealed, it is not clear why other Central American republics are not counted in the area of low marginal returns in agriculture. Castillo, noting the chronic inability of the region to produce its own food, concludes that a continued fall in the death rate and a stable birth rate "can well constitute an explosive stage in demography, with problems of much greater magnitude than the present ones in regard to the needs of food and clothing."[14]

Low incomes in agriculture go far to explain Latin American emigration to the United States, which has grown steadily in recent years, despite our rigid

[10] Julio Durán Ochoa, *Problación* (Mexico, 1955), pp. 262-265.

[11] Oswaldo B. González Tafur, *Perú: población y agricultura* (Lima, 1952), pp. 15-24.

[12] The Committee of Experts appointed by the Secretary-General reported to the United Nations Population Commission: "The general cluster of economic and social changes that accompanied the decline of birth rates in the Western world during the nineteenth and twentieth centuries ... includes such factors as urban-industrial development, the extension of mass education, the rising status of women, the growing importance of individualism, increased social mobility, etc. However, in some cases birth rates have declined in the absence of many of these changes and in other cases they have failed to decline when many such changes were present" (Gaps in Existing Knowledge of the Relationships Between Population Trends and Economic and Social Conditions," *Population Bulletin of the United Nations*, No. 4, 1954, pp. 1-7).

[13] Víctor Audera, *La población y la inmigración en Hispanoamérica* (Madrid, 1954), pp. 17, 95.

[14] Carlos M. Castillo, "El desarrollo de los recursos agrícolas de Centroamérica," *El Trimestre Económico*, Vol. XXIII (1956), pp. 73-76.

requirements for immigrant visas.[15] Not included in the statistics of immigration are the hundreds of thousands of contract laborers who cross the border, principally from Mexico.[16] "The emigration of farm hands is good for Mexico," declares Salinas. "The determining factor in the emigration of a large rural population is the dramatic scarcity of tillable land." Gains in the total agricultural output have been achieved with a *nominally* reduced farm population. The workers who migrate thereby escape the unemployment, real or disguised, which results from the meagerness of resources in agriculture and the lack of industrial employment to absorb the surplus of rural labor.[17] Mexican agricultural and business interests have opposed the recruiting of labor for work in the United States, asserting that the workers are "needed more urgently at home."[18] Obviously, the offer of compensation commensurate with an "urgent need" would deprive laborers of an incentive to emigrate. Even Durán, however, regrets the "loss of men who, by reason of age, physical condition, and "other biological qualities," deprive Mexico of the best elements in the present labor force and for reproducing their kind.[19]

A parallel case is found in the seasonal migration of Bolivian farm laborers into northern Argentina. In addition to those legally admitted to work in the harvesting of sugar cane, tobacco, and grapes, large numbers (they are called *golondrinos*) cross the border clandestinely, creating social problems similar to those associated with the "wetback" traffic between the United States and Mexico. Some Bolivians regard this emigration as a national disgrace. It seems more likely that those who emigrate, even if they earn no more than their subsistence, relieve the pressure on Bolivia's food supply, much of which has to be imported, without detracting significantly from the employable labor force in agriculture. Emigration may well be opposed by those who fear a shortage of labor as prevailing rates, just as immigration may be espoused by those who desire a wage-depressing supply of labor, particularly farm hands.

Demographers at the World Population Conference (1954) "noted that as regards much of Central America and the Caribbean Islands, severe limitations on economic absorptive capacity preclude for all practical purposes immigration on a substantial scale." But Cuba "may be an exception at least for the present" to the rule that the "Caribbean Islands generally are heavily populated in relation to agricultural resources."[20] It is by no means clear that Cuba should be

[15] Of the 67,899 Latin Americans entering in 1955, 43,702 came from Mexico, 12,876 from the West Indies (principally Cuba), 7,654 from South America, and 3,667 from Central America (*Annual Report of the Immigration and Naturalization Service, 1955*, p. 46).

[16] Not including "wetbacks," the number was 206,160 in 1953 and 288, 275 in 1954 [José Lázaro Salinas, *La emigración de braceros* (Mexico, 1955), pp. 193–197].

[17] Salinas, *op. cit.*, pp. 35–39, 60. Salinas estimates that only 12 per cent of Mexico's 196.6 million hectares is tillable, and of these 23.3 million hectares only two million hectares are productive without irrigation.

[18] New York *Times*, Dec. 29, 1956, p. 3.

[19] Durán Ochoa, *op. cit.*, pp. 180–186. Durán estimates that in 1951–1952 emigrants of all types exceeded immigrants, including re-entries of *braceros*, by 400,109.

[20] *Proceedings of the World Population Conference: Summary Report*, p. 69.

made an exception. The country enjoys higher per-capita incomes than such appallingly overcrowded islands as Haiti; but Cuban immigration, since the abolition of slavery, has generally been motivated by the desire to maintain a surplus of low-wage agricultural labor.[21]

González Tafur criticizes Peruvians who consider it "indispensable to bring in from abroad people of superior race, as they are commonly characterized, to give impetus to the progress and development of the country, as if it were very simple to ignore those living in the country who are adjudged incapable of forging their destiny with their own hands. There can be no effective progress of a people if it depreciates itself." To educate the indigenous masses, now considered culturally inferior, would produce a sort of "autoimmigration."[22] Peru, González finds, needs technicians to assist in the industrialization; but the ideal solution of this problem would be the "planned, systematic, and ample" emigration of Peruvians to study abroad. In a short time native technicians would obviate the necessity of relying upon foreign experts.[23]

As Davis has pointed out, "one of the great myths about Latin America is that it contains huge open spaces that can easily absorb mass migration from a crowded world."[24] There are, undoubtedly, sparsely settled areas sufficiently endowed with resources to attract those whose level of living is so low that migration to America would prove inviting. If such types of immigrants were not rejected for cultural reasons, it still seems doubtful that their contribution to gross national product would raise per-capita real income. In the few cases, such as the thinly-populated *llanos* of Bolivia, the Peruvian *selva*, and the Guatemalan coastal plain, where natural conditions are comparatively favorable, migration from the barren *altiplano* and infertile highlands should command more support than induced immigration.[25] Many observers have pointed out that the

[21] Ramiro Guerra y Sánchez, *Azúcar y población en las Antillas* (3rd ed. La Habana, 1944), pp. 180–181. See also: D. C. Corbitt, "Immigration in Cuba," *Hispanic American Historical Review*, Vol. XXII, 1942, pp. 280–308.

[22] Durán Ochoa (*op. cit.*, p. 266) likewise refers to the gains obtainable through "incorporating into the life of the nation, in better physical, economic, and social conditions" Mexico's large Indian population.

[23] González Tafur, *op. cit.*, pp. 37–42. Durán Ochoa (*op. cit.*, pp. 259–260) finds the proposal to repatriate Mexicans who have acquired skills abroad ironical: "in what way are those compatriots going to be brought back into the country, when it isn't even possible to avoid the exodus of thousands of workers who legally or illegally cross the frontier every year?"

[24] Kingsley Davis, "Latin America's Multiplying Peoples," *Foreign Affairs*, Vol. XXV, 1947, pp. 643–654.

[25] The incredible backwardness of Bolivian agriculture and the objectives of the agrarian reform introduced in 1952 are ably discussed in Carter Goodrich, *The Economic Transformation of Bolivia* (New York State School of Industrial and Labor Relations, Bulletin No. 34, Ithaca, 1955). A preliminary report on the resettlement of South American Indians indicates that "vertical migration" can be successful. (A. N. Lockwood, "Indians of the Andes," *International Conciliation*, No. 508, May, 1956.) The International Bank for Reconstruction and Development proposed the resettlement of portions of the highland Indian population of Guatemala, because "local population pressures in certain economically important areas are tending increasingly to depress living standards" [*The Economic Development of Guatemala* (Washington, 1951)], pp. 81–84.

failure to assimilate these isolated groups of aborigines neglects "an abundant source of human capital susceptible of utilization."[26]

A recent article in the Chilean government newspaper urges Chile to follow the example of other South American countries and pay "greater attention to attracting human capital, which the agricultural activity of the country demands." The writer sees no obstacle, except the lack of favorable legislation, to the rapid doubling of the population. Tax exemption and the promise of citizenship would attract "European farm families who, selected from a superior cultural level and possessing a tradition, know how to obtain greater benefits from the natural conditions of the environment offered to them." Specific instances of the possibility of applying the immigrants' "advanced techniques" and "traditional knowledge" are found in the areas suitable for producing industrial crops, cheese manufacture, forest industries, and sheep raising. Dutch, Swiss, Swedish, and Yugoslav immigrants are considered most desirable for these pursuits. Spontaneous immigration is inadequate; to attract immigrants "an adequate environment for the rapid adaptation" of foreigners, such as transportation, markets, and schools "in accord with their own culture," will have to be provided by the government. Such an investment, the writer tacitly assumes, would be more beneficial than an equal expenditure of public funds to increase the social capital available to the present population.[27]

A common argument favoring immigration hinges on the need for "superior" immigrants to "raise the socio-economic level of the [native] farmers through association with the foreign families."[28] Latin Americans who expouse this point of view deprecate the work habits of native laborers and extol the skill and energy of European farmers, especially Italians. The experience of some countries which have recruited, and even subsidized, immigration in order to raise the socio-economic level of their own people has not been wholly satisfactory. Durán characterizes the immigration of Mormons and Mennonites as "possibly the greatest economic success obtained in the entire history of Mexican colonization"; but their refusal to accept social and cultural assimilation creates "the gravest disadvantages, which nullify any economic advantage achieved during their stay in the country."[29] Similarly, the Venezuelan agricultural colony of

[26] Hernán Romero and Ernesto Medina, "La América Latina como laboratorio demográfico," *Proceedings of the World Population Conference, 1954* (New York, 1955), p. 545.

[27] "La inmigración agrícola," *La Nación* (Santiago), June 19, 1956, p. 13. It seems to me that it would be more desirable to educate the 690,000 Chilean children for whom there are no schools than to provide instruction for the children of immigrants. Half of Chile's youth receive one or two years of schooling, or none at all (Gastón Ossa S. M., *El robo de una herencia*: Valparaíso, 1952). Although noting that only five per cent of the population are provided with more than five years of public education, Carl Hudeczek (*Economía chilena*: Santiago, 1956, pp. 13-22) regards immigration as the key to Chilean economic development.

Persistently high illegitimacy rates may furnish another clue to the imperfect development of the native manpower potential. The rate per 1,000 live births in Argentina was 247 in 1954, but it exceeded 60 per cent in one province [Dirección Nacional de Estadística y Censos, *Informe demográfico de la República Argentina, 1944–1954* (Buenos Aires, 1956), p. 159].

[28] *La Nación* (Santiago), June 19, 1956.

[29] Durán Ochoa, *op. cit.*, pp. 247–249.

Turén, generously endowed by the National Agrarian Institute, proved "a complete success ... from the economic point of view"; but "one of the principal goals of the colonization program in Venezuela ... to raise the standard of living of its citizens through the example which foreign immigrants can set," remains unrealized.[30] In Mexico, and doubtless elsewhere, industrious immigrants, instead of inspiring their neighbors, arouse "jealousy toward their hard-won prosperity ... where the general attitude toward work is rather casual."[31] If the primary purpose of immigration is to inculcate new attitudes and improved methods in farming and grazing, non-immigrant technical assistance missions may be surer in their approach and less costly to the host country.

Many countries want immigrants to replenish the labor pool drained by native migration from the farm to the city. They have failed to observe that in the more advanced countries agricultural improvement has been a concomitant of rapid industrialization. The program of technical assistance combined with supervised credit, organized by the American International Association for Economic and Social Development in Minas Gerais, Brazil, has demonstrated that a reduced labor force, supplied with appropriate capital equipment, may obtain larger outputs and thus circumvent the effects of rural emigration.[32] But landlords everywhere are notorious for their perennial complaints of the scarcity of labor—*falta de brazos* is an expression as old as Columbus. They are, at best, reluctant to accept a shift in the supply curve of labor, which makes the substitution of labor-saving factors of production economically expedient. I resort to an Argentine Communist newspaper to find a suspicion of inconsistency in the government's plan to subsidize the immigration of Italians and Tunisians, while the cities are "full of farm laborers" who have deserted the countryside faster than industry has absorbed them. "We don't know," the Communists pretend, whether the government encourages immigration "for the sake of furnishing new and cheap labor to the landlords."[33]

Inasmuch as capital is nearly everywhere the most scarce factor of production, immigration accompanied by an inflow of capital can be advantageous. Specialized capital, such as new breeds of livestock, together with trained personnel to manage the capital, may raise national income by more than the mere subsistence of those who immigrate. Although farmers and artisans who possess capital are ordinarily not strongly motivated to migrate, a mature country like Holland, which has a planned emigration policy, can furnish highly skilled and relatively prosperous immigrants to many parts of the world. Relatively few

[30] Consejo Interamericano Económico y Social (Pan American Union), *Las inmigraciones en Venezuela: sus efectos económicos y sociales* (Washington, 1956), pp. 85–91.

[31] New York *Times*, October 30, 1955, p. 6.

[32] A. T. Mosher, *Case Study of the Agricultural Program of ACAR in Brazil* (National Planning Association, Washington, 1955).

[33] *Nuestra Palabra*, ano VII, No. 328 (Buenos Aires, Sept. 5, 1956), p. 8. Argentina has a permanent immigration mission residing in Rome. In the Perón period net immigration, comprising a high proportion of Italians, reached a peak of 154,250 in 1949. As the Argentine economy deteriorated, this figure fell to 32,548 in 1953 (*Informe demográfico*, p. 76).

such emigrants, however, have chosen to go to Latin America.[34] Furthermore, guild-like restrictions on entry into the professions generally deter the immigration of doctors, engineers, and other scientific personnel.

Since immigration tends to add to the population a high proportion of individuals in the working-age bracket, proponents of an active immigration policy emphasize the gains to the economy from acquiring human capital whose cost of upbringing has been borne by other countries. If immigration is relatively large and continuous, its effect upon the age-distribution of the total population may be appreciable, though probably not permanent. Frequently, fertility among immigrants is higher than in the native population.[35]

Turning to the argument that larger populations are needed to extend the market and encourage specialization, one need only refer to such populous nations as India to discover that numbers alone do not insure the gains from the division of labor. Not people, but wants, accessibility of markets, and the extension of the money economy are the pressing needs of most Latin-American economies. Recognizing that in the United States free interstate commerce has fostered regional specialization, the five small republics of Central America, once united politically, have recently moved to eliminate all barriers to international trade within the area. Clearly, the market provided by five countries can support industries which would be uneconomic if they were dependent upon the demand within a single nation.

"No one will deny," Brinley Thomas reminds us, "that the position occupied by the United States in the world today could never have been attained but for the periodic inflows of population over a long span."[36] The inference that populousness alone caused the country to grow would be patently indefensible; it would be less difficult to demonstrate that growth caused immigration. The "positive contribution" of immigrants depends upon a favorable combination of geographic, social, and political factors in the areas in which they settle. Generally, the Latin-American countries do not offer the conditions which, in other periods, made the United States, Canada, and Australia capable of absorbing a steady influx of immigrants. No country, in fact, may count on the simple expedient of encouraging population growth as a means to augment, or even maintain, the level of its material well-being.[37]

[34] In the ten-year period, 1946–1955, Argentine admitted 924 and Brazil, 3,130, of the 245,103 Dutch emigrants (B. W. Haveman, "Planned Emigration, the Solution of Holland's Population Problem," *Progress*, Vol. 45, No.251 (London, 1956), pp. 116–122. In 1948 eighty Dutch families arrived in São Paulo with 400 milch cows and considerable dairy equipment (United Nations, "Immigration in Brazil": E/CN/12/169/Add. 1, 1950).

[35] UNESCO, *The Positive Contribution by Immigrants* (Paris, 1955), pp. 142–143. "Italian immigrants contributed to the growth of Argentine population not only through accessions by immigration, but also through the unsurpassed fecundity of their women." (*Ibid.*, p. 150).

[36] *The Positive Contribution by Immigrants*, pp. 165–185. A fuller exposition of the relations between migration and economic growth will be found in Professor Thomas' book, *Migration and Economic Growth* (Cambridge, 1954).

[37] The thesis that even the United States may face a too rapid demographic growth is developed by Joseph J. Spengler in "Population Threatens Prosperity," *Harvard Business Review*, Vol. XXXIV, 1956, pp. 85–94.

STATE REGULATION OF MILK IN THE SOUTHEAST

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I. INTRODUCTION: INTERSTATE TRADE BARRIERS

Definition. An interstate trade barrier may be defined as any legislation or administrative practice, state or local, which tends to impede, hinder or delay the free movement of goods and services from one state to another;[1] "free movement," as the term is used here, implies only that out-of-state goods and services will not be subjected to discriminatory taxes or regulations. In a broader sense, trade barriers would include the multifarious activities of non-governmental agencies and institutions calculated to foster and encourage the development of local commerce and industry at the expense of "foreign" goods and services, and the many other manifestations of economic provincialism; because of obvious space limitations, attention is directed here, in the main, toward governmental marketing barriers. Parenthetically, it may be observed that some trade barriers may be in the public interest; for example, appropriate sanitary regulations which forbid the importation of diseased plants or animals.

Postulates. Governmental marketing barriers[2] (1) are a further manifestation of the irrepressible conflict between Federal and state authority, and are contrary to the letter and spirit of the United States Constitution;[3] (2) increase the sphere of the role of the government in economic activity at the expense of the free enterprise system; (3) dislocate normal economic processes by forcing goods and services through artificial channels; (4) frequently result in the uneconomic allocation of human and material resources; and (5) tend to reduce the standard of living of the populace as a whole by increasing the cost of goods and services.

Motivation. The erection of artificial economic trade barriers has been prompted, in part, by the desire of state and local units of government to (1) tap new sources of revenue to meet ever-increasing costs of operation;[4] (2) encourage and develop local commerce and industry with the expectation of increasing public and private income; (3) afford more protection to local commerce and industry, including agriculture; and (4) protect the local citizenry from exploitation, real or fancied, from the outside. Local pride, hostility

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[1] See Paul Truitt, "Interstate Trade Barriers in the United States," *Law and Contemporary Problems*, Vol. VIII, No. 2, (Spring 1941), p. 209.

[2] See Clement S. Logsdon, *Interstate Trade Barriers*, unpublished Ph.D. dissertation, Ohio State University, 1940.

[3] See Article I, Sections 8, 9, and 10; Article IV, Section 2; and the Fourteenth Amendment. Also *Gibbons v. Ogden*, 6 L. Ed. 23 (1824); *United States v. Southeastern Underwriters Association*, 322 U. S. 533 (1944).

[4] See Reynold E. Carlson, "Interstate Trade Barriers Effects of the Use Tax," *Law and Contemporary Problems*, Vol. VII, No. 2, (Spring 1941), p. 223.

toward other sections of the country, toward a particular industry, or toward forms of merchandising which threaten the vested interests of local groups, may be contributing factors. In the main, the movement for the erection of trade barriers, in one form or the other, has been spearheaded by well-organized and resourceful special interest groups which have sought, and continue to seek, favors for themselves and restrictions for their competitors; in many instances, public officials, either wittingly or unwittingly, have made common cause with the pressure groups. The resulting restrictive legislation is not necessarily in the public interest.

Pattern. In the area of marketing, reacting favorably to the pressure of special groups with vested interests to protect, state and local governments, exercising police and taxing powers, have directed their retaliatory or restrictive legislation, principally, toward the less orthodox forms of distribution (mobile or transient merchants, supermarkets, chain stores, mail-order houses, discount houses, and vending machines); certain pricing policies (loss leaders, trading stamps); and the protection of local commerce and industry, including agriculture (livestock, fertilizer, nursery stock, eggs, cheese, and milk). The broad pattern of trade barriers includes: (1) sale and use taxes,[5] the latter having the "same effect as a protective tariff" in the view of the United States Supreme Court;[6] (2) privilege and license taxes;[7] (3) regulation of commercial motor carriers and railroads; (4) discriminatory grade-labeling; (5) regulation of alcoholic beverages;[8] (6) agricultural inspections, quarantines, and embargoes;[9] (7) public preference laws;[10] (8) advertising of domestic products; (9) general occupational licensing;[11] (10) unfair trade practice acts; (11) fair trade laws;[12] (12) product integration restrictions; (13) building codes that favor local products and local labor; and (14) the regulation of the production and marketing of milk.

While a listing of all the manifestations of economic provincialism on the

[5] See Edward L. Bassett, Jr., "State Taxation of Interstate Commerce," *Vanderbilt Law Review*, Vol. 4, (1951), p. 496.

[6] *Miller Brothers Company v. Maryland*, 347 US 340, 74 S.Ct. 535 (1954).

[7] See *Commonwealth of Virginia v. Baltimore Steam Packet Co.*, 193 Va. 55, 68 SE (2d) 137 (1951), appeal dismissed 343 US 923 (1952); *County Board of Arlington City v. Arcade Sunshine Co.*, 196 Va. 916, 86 Se (2d) 163 (1955); *County Board of Arlington City v. Kent Stores of Washington*, 196 Va. 929, 86 SE (2d) 44 (1955); *Chesapeake and Potomac Telephone Co. v. City of Newport News* 196 Va. 627, 85 SE (2d) 345 (1955).

[8] *Williams v. Commonwealth of Virginia*, 190 Va. 280, 56 SE (2d) 537 (1949); *Atkins v. Manning*, 206 Ga. 219, 56 SE (2d) 260 (1949).

[9] See *Sligh v. Kirkwood*, 237 US 52 (1945); *Parker v. Brown*, 317 US 341 (1943); *State v. Lovelace*, 228 NC 186, 45 SE (2d) 48 (1947).

[10] (Virginia Paint Law validated), *Lasting Products Company v. Genovese*, 197 Va., 87 SE (2d) 811 (1955).

[11] (Conflict between Federal and state authority), *Leslie Miller, Inc. v. State of Arkansas*, 77 S.Ct. 257 (1956).

[12] (Price-fixing of cigarettes invalidated) *Williams v. Hirsch*, 211 Ga. 534, 87 SE (2d) 70 (1955); Ga. Fair Trade Act of 1937 held unconstitutional), *Grayson-Robinson Stores, Inc. v. Onedia, Ltd.* 209 Ga. 613, 75 SE (2d) 161 (1953) and *Cox et al v. General Electric Co.*, 211 Ga. 286, 855 SE (2d) 514 (1955).

statute books of the southeastern states would serve to illustrate the pattern of governmental marketing barriers, described above, it would require more space than is now available, and a more intensive investigation than has been made up to this point. A few of the more glaring examples would include: (1) the Georgia Statute that limits the use of "fresh" to eggs produced in that state;[13] (2) the Virginia enactment that makes it unlawful for a nonresident to "take or catch fish or shellfish, in any of the waters of this state ... for market or profit ... ";[14] (3) the Georgia law which empowers the Commissioner of Agriculture to declare an embargo on any fruit, vegetable, or truck crop coming into the state when the supply of the same, grown in Georgia, is ample for the requirements of the local markets at that time;[15] (4) the Virginia enactment which requires the approval of the Commissioner of Fisheries before any seed oysters can be removed from the state.[16] (5) the North Carolina requirement that commercial fertilizers must conform with a formula approved by the Commissioner of Agriculture;[17] and (6) the Virginia restrictions on the catching of menhaden fish by nonresidents.[18] All of these enactments appear to place an undue burden on interstate commerce.

Scope of Inquiry. A comprehensive treatment of interstate trade barriers in the Southeast should include an examination of all legislative enactments and administrative practices that affect the free flow of goods and services. A few of the more pertinent topics have been indicated above; the list, however, is by no means complete. Such an investigation, while it is in progress, is beyond the scope of this paper. For the immediate present, attention will be directed to the production and marketing of milk. Sanitary and health regulations, adopted and administered strictly for the purpose of protecting the health, safety and welfare of the public, are beyond the scope of this study.

II. MILK

Introduction. State regulation of the production and marketing of the essential commodity of milk, as distinguished from health and sanitary regulations which can be administered in such a way as to discriminate against out-of-state products,[19] date from the Great Depression, and coincide with the entry of the Federal government into this field.[20] In 1933, the legislature of

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[13] See Gosnell, Cullen B., and Anderson, C. David, *The Government and Administration of Georgia* (New York: Crowell, 1956), p. 366.

[14] *Code of Va.* (1950) Section 28-139.

[15] *Ga. Code Annot.*, Book 2, p. 363 (Acts of 1935, p. 371).

[16] See *Haughton v. Lauk Ford*, 189 Va. 183, 52 SE (2d) 111 (1949) and Section of *Code of Va.* cited therein.

[17] See *Patapsco Guano Co. v. Board of Agriculture of North Carolina*, 171 US 345, 18 S.Ct. 862.

[18] *Code of Va.* (1950), Section 28-63.

[19] See *Mintz v. Baldwin*, 289 US 346 (1933); *Gustafson v. City of Ocala*, 53 So. (2d) 658 (1951); *Dean Milk Co. v. City of Madison*, 340 US 349. See *General Statutes of North Carolina, 1950*, Sections 106-261.1 through 106-266.5 for the provisions of the Milk Import Act.

[20] Agricultural Adjustment Act of 1933 (48 *Statutes* 31) and Agricultural Marketing Act of 1937 (50 *Statutes* 246). See, also, *United States v. Rock Royal Cooperative, Inc.*, 307 US 533 (1939); *United States v. Wrightwood Dairy Company*, 315 US 110 (1942).

New York, acting in accordance with the report of a special study commission, established a Milk Control Board with power, among other things, to "fix minimum and maximum ... retail prices to be charged by ... stores to consumers for consumption off premises where sold." Litigation questioning the constitutionality of this legislation, invoking the equal protection and due process clauses of the Fourteenth Amendment, reached the United States Supreme Court, in 1934, in the celebrated case of *Nebbia v. New York*.[21] In a five-to-four decision, the Supreme Court, in an able opinion written by Mr. Justice Roberts, held that a state, under its police power, could regulate the retail price of milk even if the production and marketing of this commodity did not fall within the classical category of a business "affected with a public interest." The New York law served as a pattern for legislation in other states, and the *Nebbia* case as a precedent for Federal[21a] and state courts, with exceptions noted below. It now appears that state legislation regulating the production and marketing of milk might run afoul of the courts only if it were unduly arbitrary or discriminatory in nature, or if it were designed primarily to exclude out-of-state competition; if the latter could be established to the satisfaction of the courts, such legislation would be in conflict with the rule of the United States Supreme Court in the case of *Baldwin v. Seelig*.[22]

Pattern of Regulation.[23] With the notable exception of Virginia, the southeastern states for a long number of years, more concerned with the production of tobacco, cotton, peanuts, and other cash crops, consumed more milk than they produced. During this period of time, these states did not have a milk industry that clamored for legislative protection. While the South, as a whole, is still a milk-deficient area, substantial investments have been made in milk-producing herds and dairy equipment in the last twenty years. In response to the demand of producers and processors, Virginia in 1934,[24] and Georgia in 1937,[25] in enactments referred to as temporary in nature, adopted legislation to regulate the production and marketing of milk; the so-called temporary measures now give the appearance of being permanent, which might cause the political scientist to observe that the trend in legislation and administrative practice is for the temporary to become permanent after the emergence. (The Virginia-[26]Georgia[27] law-makers have since deleted the reference to the "emer-

[21] 291 US 502 (1934).

[21a] *Highland Farms Dairy, Inc. v. Agnew*, 300 US 608 (1937).

[22] 294 US 511 (1935). See, also, *H. P. Hood & Sons v. DuMond*, 366 US 525 (1949).

[23] See Spencer, Leland, and Christenson, *Milk Control Programs of the Northeastern States*, Ithaca, N. Y.: Cornell Univesity Agricultural Experiment Station, 1955; *Regulations Affecting the Movement and Merchandising of Milk*, Washington: United States Department of Agriculture, 1955; Conner, Maynard C., *The Milk Market Control Law in Virginia*, Blacksburg, Va: Virginia Polytechnic Institute, 1951; *Barriers to the Increased Consumption of Fluid Milk*, Washington: The National Grange, 1955; and Federal Trade Commission, *Milk Distribution Prices, Spreads, and Profits*, Washington: U. S. Government Printing Office, 1945.

[24] *Code of Va.* (1950), Sections 3-346 to 3-383.

[25] *Georgia Laws* (1937) pp. 247-264, as amended.

[26] *Acts of the General Assembly*, Session 1940, Chapter 259.

[27] *Georgia Laws* (1949) p. 78.

gency" from the preamble of the milk control statutes.) North Carolina followed the lead of her sister states in 1953 in enacting milk-control legislation.[28] South Carolina is the only southeastern state which does not attempt to control the production and marketing of milk.

Regulatory legislation in this area, which varies widely from state to state,[29] usually covers (1) entry into business; (2) business practices;[30] (3) grading and classification of the product; (4) assessment of producers and processors to pay the cost of regulation; (5) establishment of marketing areas within a state (North Carolina has nine such areas, established for the purpose of selecting local milk boards, for example); (6) determination of the price paid the producer; and (7) retail pricing. The North Carolina Commission, under the basic legislation of 1953, was not vested with authority to fix retail prices, although the proponents of the measure urged the law-makers to include such a provision; a 1955 amendment, however, empowers the Commission to prohibit the resale of milk below cost for the purpose of injuring competition.[31] In North Carolina, a producer may sell in any area; in many states a producer is restricted to one or more marketing areas. Many states, including North Carolina, have legislation, other than health and sanitary regulations, closely related to the production and marketing of milk, which are usually administered by the commissioner of agriculture; these enactments cover the importation of milk and milk products, out-of-state inspection of dairies and processing plants, and related matters.[32] In many instances, these statutes, which can be administered in such a way as to protect local industry from outside competition, pre-date the so-called milk control acts.

Administration. Responsibility for the administration of milk control acts, as distinguished from related legislation, is vested in milk control boards or commissions, and not in single administrators. Where the state is divided into a number of milk marketing areas, a board or a commission, which functions under the supervision of the state agency, is provided for each such area; decisions of the local agency may be appealed to the state board or commission, and from the state board or commission, on matters of law only, to the courts, either a court of general trial jurisdiction or directly to the highest appellate court. In constituting milk control boards and commissions, both state and area, southeastern legislators embraced the principle of representation by interest groups; producers, processors, distributors, and public representatives serve as part-time members of state and local regulatory bodies.[33] Representatives of the regulated industry can, and often do, out-vote the public repre-

[28] *Session Laws of North Carolina, 1953*, Chapter 1338.

[29] See Research Department, Arkansas Legislative Council, *Control of Milk Prices in the Several States*, Little Rock: 1955.

[30] (Suspension of distributors license) Raleigh (N. C.) *News and Observer*, March 21, 1956, p. 6.

[31] *Session Laws of North Carolina, 1955*, Chapter 406.

[32] See *General Statutes of North Carolina, 1952*, Sections 106-246 to 106-269. See also, Rankin, Robert R., *The Government and Administration of North Carolina*, New York: Crowell, 1955, pp. 242-260.

[33] See *Session Laws of North Carolina, 1955*, Chapter 1338.

sentatives. The seven-man Georgia Milk Control Board does not include a member whose sole function is to represent the public, although one member is denominated the "consumer-distributor" representative. In most states of this region, boards and commissions are independent of the state departments of agriculture. In North Carolina the Commissioner of Agriculture is an ex-officio member of the regulatory body; in Georgia, since 1945, the Commissioner of Agriculture has performed most of the functions of the control board, although the board continues to exist.[34] The most objectionable features of this administrative set-up are (1) the division of regulatory authority between the milk control boards and commissions and the departments of agriculture, and (2) representation by group interest on the boards and commissions. In answer to the second point, the industry advances the argument that the production and marketing of milk can only be regulated by individuals who know something about the industry; if this argument has any validity, then the statutes should be amended to permit railroad and public utility officials to serve as part-time members of railroad and utility commissions.

Regulation and the Courts. Closely related to the pattern of regulation, and administration, are the restrictions, if any which appellate courts have placed around the exercise of delegated authority by milk boards and commissions. While an intensive and exhaustive study of judicial opinions in the area is beyond the scope of this study, a brief examination of some of the leading cases, both Federal and state, that have developed in the southeastern region, may serve to illustrate some of the problems of regulation.

The Virginia Supreme Court of Appeals, after some hesitation, upheld the constitutionality of the 1934 act in *Reynolds v. Milk Commission;*[35] the court noted that the "state under its police power, has the right to regulate a business which is affected with a public interest," which differs somewhat from the basis on which the United States Supreme Court validated the New York act in the *Nebbia* case. Two years later, the United States Supreme Court gave its approval to the portion of the Virginia act which provided for the fixing of resale prices.[36] The commission does not have power to fix price differentials for milk based on the type of containers in which the product is sold,[37] nor to set a differential in price between home and store sales.[38] The Court will set aside an order of the Commission if it determines that the evidence does not sustain the findings.[39] The Commission does not have the power to set the price paid to Virginia producers for milk bought and processed in Virginia for distribution outside the state.[40] The Commission has the right to designate

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[34] Gosnell and Anderson, *op. cit.,* p. 251.

[35] 163 Va. 957, 179 S.E. (1935). See, also, *Board of Supervisors of Elizabeth City County, Virginia v. Milk Commission,* 191 Va. 1, 60 SE (2d) 35 (1950). The favorable decision in the *Reynolds* case came after a rehearing.

[36] *Highland Dairy Farms v. Agnew,* 300 US 608, 57 S.Ct. 549 (1937).

[37] *Lucerne Cream and Butter Co. v. State Milk Commission,* 182 Va. 490, 29 SE (2d) 397 (1944).

[38] *Safeway Stores v. State Milk Commission,* 197 Va. 69, 87 SE (2d) 769 (1955).

[39] *Rountree v. Milk Commission,* 184 Va. 777, 36 SE (2d) 613 (1946).

[40] *Pet Dairy Products Co. v. State Milk Commission,* 195 Va. 396, 78 SE (2d) 645 (1953).

the place where producers make delivery, and the producers are bound by such an order.[41] These cases indicate that the Virginia courts have not been unduly restrictive in interpreting the authority vested in the regulatory agency by the lawmakers.

The Georgia appellate courts (and here no distinction is made between the Supreme Court and the Court of Appeals) considered various phases of the 1937 act, as amended, including the fixing of resale prices, and gave judicial approval to the legislation.[42] Despite these decisions, and the Federal cases, the Supreme Court of Georgia in 1951 invalidated the price-fixing provision of the statute.[43] The Court pointed out that previous decisions on the price-fixing provision were not binding since they were not "full bench" decisions, whatever that means, and that Georgia courts were not bound by the decisions of the United States Supreme Court in the *Nebbia* and *Highland Farms* cases; the Court found the price-fixing section in conflict with the due process clause of the state constitution. This rather unusual decision caused the lawmakers to adopt an ingenious device: all contracts between producers and processors, between processors and distributors, and between distributors and retail outlets, must be approved by the Milk Control Board;[44] the Board will not approve such a contract if the price to be paid for the commodity does not conform with the price orders issued by the Board.[45] "Freedom of contract" won in the Georgia Supreme Court; in actual practice, stripped of the subterfuge, it did not fare so well in the Milk Control Board.

The North Carolina milk control act of 1953, as amended in 1955, has never been before a Federal or appellate court. Since this statute is similar to the enactments of other states which have received judicial approval, it is assumed that the North Carolina Supreme Court would not find this law objectionable. There is a feeling, however unwarranted it may be, that the State Milk Commission is not anxious for a court test, especially with reference to the price-fixing provisions of the 1955 amendment. A Henderson merchant was advised by the Commission that he could be prosecuted for selling milk below cost; he defied the Commission and expressed a willingness to become the guinea pig to test the state law.[46] The Commission did not prosecute, and the merchant did not change his pricing policy. An Alamance County Superior Court modified an order of the Commission, giving a "suspended revocation" to two dairies,[47] and the Commission did not appeal. Perhaps the Commission subscribes to the adage that caution is the better part of valor.

[41] *Southside Cooperative Milk Producers Association; Pritchard Dairy, Inc. v. State Milk Commission*, 198 Va. 108, 92 SE (2d) 357 (1956).

[42] See *Bohannon v. Duncan*, 185 Ga. 840, 196 SE 897 (1938); *Gibbs v. Milk Control Board of Georgia*, 185 Ga. 844, 196 SE 791 (1938); and *Holcombe v. Georgia Milk Producers Confederation*, 188 Ga. 358, 3 Se (2d) 705 (1939).

[43] *Harris v. Duncan*, 208 Ga. 561, 67 SE (2d) 692 (1951).

[44] *Milk Control Act of 1937*, as amended by 1952 General Assembly, Section 19.

[45] See *Milk Control Manual*, Atlanta, Georgia; Milk Control Board, October 7, 1955.

[46] Raleigh (N. C.) *News and Observer*, August 16, 1955, p. 6.

[47] Raleigh (N. C.) *News and Observer*, March 21, 1956, p. 3.

Price-Fixing. Mr. Chief Justice Warren recently wrote,[48]

It has been held too often to require elaboration now that price fixing is contrary to the policy of competition ... and that its illegality does not depend on a showing of its unreasonableness, since it is conclusively presumed to be unreasonable. It makes no difference whether the motives of the participants are good or evil; whether the price fixing is accomplished by express contract or by some more subtle means; whether the participants possess market control; whether the amount of interstate commerce is large or small; or whether the effect of the agreement is to raise or lower prices.

Price-fixing is permitted, pointed out the Chief Justice, only where it is sanctioned expressly by legislative authority. While the eminent jurist was not referring to the price-fixing provisions of state milk control acts, his views express the opinion of courts, and the general public, about measures which are restrictive of a free economy. Price fixing is the most controversial feature of state milk control acts. Of the sixteen states with milk control acts, all but four (Connecticut, Louisiana, New York and Utah) give the state commission or board some control over prices.

The retail price-fixing features of the North Carolina act[49] have been described. If the Commission were to cause a merchant to be prosecuted for an alleged violation, the Commission would be under the burden of showing that the merchant was selling milk below his costs. If the retail price were below the wholesale price, the problem would be simple. If the sale, however, were at a price above the wholesale price, and yet not at a price considered to be fair by the Commission, and did not take into account the merchant's cost of handling the product (overhead allocation to that product), the Commission would be faced with a complex problem. In other areas of price-fixing, the Commission is empowered to fix the price paid producers by distributors and processors; in determining the price " ... the Commission shall be guided by the cost of production and distribution, including compliance with all sanitary regulations in force in such market or markets, necessary operating, processing, storage and delivery charges, the price of other foods and other commodities, and the welfare of the general public."[50] Under this broad grant of power, the Commission has a free hand in price-fixing as far as the price paid to the producer is concerned; the Commission, however, in answer to the allegation that milk control had caused an increase in the retail price of the product, reports that the producer is being paid less today than in 1953 (the date of the adoption of the act),[51] which, to an extent, supports the findings of the Agricultural Marketing Service of the United States Department of Agriculture.[52] Price-fixing, while it may have contributed to the stabilization of the industry, has not increased the income of the producer.

[48] *United States v. McKesson and Robbins, Inc.*, 351 US 305, 76 S.Ct. 937 (1956).

[49] *Session Laws of North Carolina*, 1955, Chapter 406.

[50] *Session Laws of North Carolina*, 1953, Chapter 1338, Section 3(j).

[51] Letter from North Carolina Milk Commission, October 30, 1956.

[52] Agricultural Marketing Service, *Marketing Cost and Margins for Fresh Milk*, Washington: U. S. Department of Agriculture, October, 1956.

The price-fixing features of the Virginia act are similar to those of the North Carolina act, with the exception that the State Milk Commission " . . . may fix the minimum and maximum wholesale and retail prices to be charged for milk in any market . . .";[53] in fact, the similarity of the text of Virginia and North Carolina statutes indicates that the North Carolina lawmakers used the Virginia statute as a model. Since a public hearing is required before a price order can be issued by the Commission, the Commission does little more than act as arbiter between opposing industry groups; this procedure, in pricing and other areas, makes it possible for the milk industry " . . . to stabilize itself by unduly restricting competition through mutual agreement which might otherwise be prohibited by law."[54] It might be better, writes Mr. Maynard C. Conner, to restrict price-fixing to the producer level only and on a short-run stop-loss basis.[55] In a series of articles for the Richmond *Times-Dispatch*,[56] appearing in December 1955, Mr. Richard Wilson, a staff member, analyzed the problems of the milk industry, and the solution provided by the law-makers: significant is his indication of a trend noted elsewhere: the price paid to producers is declining in spite of the fact that the retail price of milk is increasing. The position of a special interest group is made available to the public in a pamphlet entitled *Why We Need the Virginia Milk and Cream Act*, published and distributed by the Virginia State Dairymen's Association.[57] Although the evidence is somewhat limited in scope, a study of the available data indicates that Virginia has not yet found a definitive solution to problems inherent in the state regulation of the production and marketing of milk: (1) stabilization of the industry, (2) guarantee of a fair return to the producer; (3) prevention of the development of a virtual processor-distributor monopoly; and (4) safeguarding the interests of the consumer.

The complex Georgia price-fixing procedure, devised to meet the objections of the Georgia Supreme Court in the *Harris* case, is most unique; it has been the subject of adverse editorial comment,[58] and a legislative investigation.[59] Agricultural economists at the Griffin Experiment Station, using the Boston Milk Shed Area pricing formula with local modifications, periodically determine, at the request of the Milk Control Board, a (1) retail price, (2) wholesale price, (3) inter-plant price, and (4) producer price. The formula is calculated to keep the price of milk in line with the general price level and, more especially, with the costs of producing, processing, and distributing milk; the lawmakers have decreed that the milk industry is entitled to a "reasonable return" on invest-

[53] *Code of Va.* (1950) Section 3-383 (12) (j). (*Acts of the General Assembly* Session 1940, Chapter 259, Section 12 (j).)

[54] Conner, Maynard C. *The Milk Market Control Law in Virginia*, Bulletin 444, Agricultural Experiment Station, Blacksburg, Virginia: Virginia Polytechnic Institute, 1951, p. 48.

[55] *Ibid.*, p. 49.

[56] Reprinted in pamphlet form and distributed by the Virginia State Dairymen's Association, Blacksburg, Va.

[57] Dated December 31, 1955.

[58] *Atlanta Journal*, June 7, 1956, p. 40; June 8, 1956, p. 40; Atlanta Constitution, June 18, 1956, p. 4.

[59] *Atlanta Journal*, June 7, 1956, p. 57.

ments. The findings of the economists are reported to the Milk Control Board, and the Board issues a milk-price order; all contracts for the purchase and sale of milk must conform with the prices announced in the order. The Georgia consumer, under the formula price-fixing system, pays a price far above the national average for milk.[60] Price increases, under the formula, can come during the summer months when production is at a high level.[61] This has caused the *Atlanta Journal* to conclude that "Milk prices here are fantastic . . . . Some families are forced to serve powdered milk because, for them, the price is no longer unreasonable—it is prohibitive . . . the regulation has resulted in higher and higher prices."[62]

An objective evaluation of the Georgia price-fixing system should take into consideration some of the characteristics of the milk industry in that state, and price and production trends under regulation.[63] From 1939 to 1955—a period during which the milk industry was under constant regulation—percentage increases in the price of milk were behind those of other agricultural products. Under regulation, there has been a steady increase in the quantity of milk produced, even though the production per cow is almost a third lower than the national average. The producer is handicapped by the high cost of feed, and the lack of good year-round pasturage; this leads to the conclusion that milk can not be produced as cheaply in Georgia as in the dairy states, and that this is an important factor in the pricing process. While total production is increasing, the financial position of the producer has not improved.[64] Price increases benefit the processor and the distributor more than they do the producer; this follows the national trend.[65]

Effects of State Regulation. The Agricultural Marketing Service of the United States Department of Agriculture, after a study of state milk control laws, reached conclusions which are believed to be valid for the problems under consideration here: (1) If price regulatory acts were modified to permit the free movement of milk, prices to about one-fourth of the producers in the United States would probably decline an average of about 48 cents per hundred pounds; (2) declines would be off-set to some extent by increased consumption; (3) state milk controls over the prices to producers use a variety of restrictive measures and policies, mainly to offset their inability to control prices paid for milk in another state; and (4) state milk controls over resale prices tend to limit the opportunities for introducing innovations in marketing methods and practices, or for using aggressive methods for promoting sales.[66] The National Grange,

[60] *Atlanta Journal,* June 6, 1956, p. 21 (quoting from a report of the U. S. Bureau of Labor Statistics).

[61] *Atlanta Journal,* June 5, 1956, p. 1.

[62] July 2, 1956, p. 17.

[63] See Agricultural Marketing Service, *Dairy Production,* Washington: U. S. Department of Agriculture, October 1955.

[64] *Atlanta Constitution,* June 8, 1956, p. 4.

[65] Agricultural Marketing Service, *Marketing Costs and Margins for Fresh Milk,* Washington: U. S. Department of Agriculture, October 1956.

[66] *Regulations Affecting the Movement and Merchandising of Milk,* Washington: U. S. Department of Agriculture, June 1955.

after an intensive study, found that "State control of wholesale and retail milk prices has eliminated price competition for all practical purposes, has handicapped efficiency and innovation in the industry, has caused controversy and consumer ill-will, and has led to wasteful and illegal trade practices."[67]

In the southeastern region, a tentative evaluation of the data now available, indicates that state regulation of the production and marketing of milk is largely responsible for: (1) the substantial increase in the retail price of milk, although other factors (increasing labor costs, price of equipment and supplies, et cetera) share a portion of this responsibility; (2) the reduction in consumer demand for milk, and the tendency on the part of consumers to substitute unregulated powdered milk, and similar products, for fluid milk; (3) a material reduction in the quantity of milk imported into a controlled state; (4) the erection of trade barriers within a state in the form of marketing areas; (5) attracting to the industry, in the early stages of regulation, of marginal producers who could not have operated profitably in a highly competitive market; (6) making it difficult, if not impossible, for new producers to enter the market; (7) the gradual elimination of the small producer, with his limited resources, and the substitution therefor of the large and resourceful corporate producer, although technological factors may have been partially responsible for the elimination of the small producer; (8) a wider profit margin for the processor, at the expense of both the producer and the consumer, thereby attracting nationally-known processors and distributors to the regulated states; (9) increasing the trend toward monopolization in the processing field; (10) a noticeable lack of coordination and cooperation between the regulators and the health authorities, although each, in his own way, may function in such a manner as to obstruct the free flow of commerce; and (10) a new emphasis on a trend of thinking in public administration, to-wit: part-time representatives of special interest groups should administer the regulatory acts, not necessarily in the public interest, but for the benefit of the industry regulated.

III. CONCLUSIONS

1. There is a marked increase in the tendency of state governments, clearly discernible in the southeast, to use police and taxing powers, and even sanitary and inspection regulations, to discriminate against out-of-state goods and services. Such legislation inhibits the free flow of goods and services from one state to another, constituting an economic trade barrier. The chief motivating forces behind the offending legislation and administrative practices are: (1) the desire to encourage the in-state production of goods and services, and (2) to tap new sources of revenue to support the varied operations of state governments.

2. Both the Federal and the state governments are engaged in the regulation of the production and marketing of milk. Unlike the Federal regulatory acts, state legislation in this area, which for the most part is administered by part-time representatives of the regulated industry, restricts the free flow of this

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[67] *Barriers to Increased Consumption of Milk*, Washington: The National Grange, January 1955.

commodity from one state to another, thereby constituting an economic trade barrier. State regulatory acts, foisted on the public with the argument that they are essential to insure the production of a supply of milk sufficient to meet consumer demand, were really designed to protect inefficient in-state producers and processors from outside competition, and are largely responsible for the substantial increase in the retail price of the product recorded in recent years, and for an uneconomic allocation of material and other sources. Such legislation disregards the principle of comparative advantage, and moves in the direction of making or attempting to make, each state self-sufficient, regardless of the economic waste involved. Consumer resistance to price increases, in the form of the substitution of unregulated powdered milk, may result in a material lowering of the demand for fluid milk; the long-run affect of the regulatory legislation, if the indicated reduction in demand materializes, may be disastrous for the industry. State regulations confer little benefit on the consumer; with modern refrigeration, improved techniques in processing, and adequate transportation, the product from the milk-surplus states can be made readily available on every doorstep, wherever located, at a price not in excess of retail prices established by law in the milk-regulated states. The efficient local producer and processor would have nothing to fear from this competition.

COMMUNICATIONS

THREE CONCEPTS OF THE MULTIPLIER

In the final section of Chapter 4 of *A Guide to Keynes*,[1] Hansen clears away most of the obscurity which surrounds the discussion of the multiplier in Chapter 10 of *The General Theory*. There are, however, three points at which his exposition appears to require some elaboration and it is the purpose of the present note to provide this elaboration.

I. THE "ARITHMETIC" MULTIPLIER

In discussing what might be termed the "lag" version of the multiplier model (the version which postulates a one period lag in the consumption function) Hansen brings out Keynes' important and interesting point that, in every period after the initial disturbance from equilibrium, the relationship

$$\frac{\Delta Y_n}{\Delta I_n} = \frac{1}{1 - \frac{\Delta C_n}{\Delta Y_n}}$$

holds, where ΔY is the deviation of National Income from the original equilibrium, ΔI the deviation of Investment and ΔC the deviation of Consumption. He also makes it clear that the "arithmetic" multiplier, $\dfrac{1}{1 - \dfrac{\Delta C_n}{\Delta Y_n}}$, converges on the "true" multiplier, $\dfrac{1}{1 - b}$, (where b is the marginal propensity to consume), so long as b lies between 0 and $+1$. He presents no proofs of these relationships however, and the first part of our task of elaboration is to supply them.

The lag version of the multiplier model is

$$C_n = a + bY_{n-1}$$
$$Y_n = C_n + I_n$$

where C is real Consumption Expenditure, I real net Investment Expenditure and Y real National Income; and from these two expressions we get

$$(1) \qquad Y_n = a + bY_{n-1} + I_n.$$

Now, when National Income is constant at Y and Investment at I (i.e. when the system is in equilibrium) equation (1) can as well be written as

$$(2) \qquad Y = a + bY + I$$

and subtracting equation (2) from equation (1) we get

$$(Y_n - Y) = b(Y_{n-1} - Y) + (I_n - I)$$

[1] See A. H. Hansen, *A Guide to Keynes*, McGraw-Hill, New York, 1953.

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or

$$(3) \qquad \Delta Y_n = b\Delta Y_{n-1} + \Delta I_n$$

where $\Delta Y_n = (Y_n - Y)$, $\Delta Y_{n-1} = (Y_{n-1} - Y)$ and $\Delta I_n = (I_n - I)$. Equation (3) is identical with equation (1) except that the variables are now expressed in terms of deviations from some equilibrium.

Let us suppose that the system is in equilibrium prior to period 0 and that it is dislodged from equilibrium in that period by a permanent increase in Investment from I to, say, I'. Then the time path of the deviations of National Income from its original equilibrium will be that indicated by equation (3) with some constant $\Delta I = (I' - I)$ replacing ΔI_n. That is, the course of the National Income deviations in the periods subsequent to the shock will be given by

$$(4) \qquad \Delta Y_n = b\Delta Y_{n-1} + \Delta I.$$

Starting with the first equation of the model and reasoning in a parallel fashion we find an expression which gives the time path of the Consumption Expenditure deviations in the periods after the shock. This expression is

$$(5) \qquad \Delta C_n = b\Delta Y_{n-1}.$$

Equations (4) and (5) are all we need in order to establish the truth of Hansen's points about the "arithmetic" multiplier.

From equation (4) we obtain the series

$$\Delta Y_0 = b\Delta Y_{-1} + \Delta I = \Delta I$$

$$\Delta Y_1 = b\Delta Y_0 + \Delta I = b\Delta I + \Delta I = \Delta I(1 + b)$$

$$\Delta Y_2 = b\Delta Y_1 + \Delta I = b\{\Delta I(1 + b)\} + \Delta I = \Delta I(1 + b + b^2)$$

$$\Delta Y_3 = b\Delta Y_2 + \Delta I = b\{\Delta I(1 + b + b^2)\} + \Delta I = \Delta I(1 + b + b^2 + b^3)$$

$$\cdot$$
$$\cdot$$

$$\Delta Y_n = b\Delta Y_{n-1} + \Delta I = b\{\Delta I(1 + b + \cdots + b^{n-1})\} + \Delta I$$
$$= \Delta I(1 + b + b^2 + \cdots + b^n).$$

From equation (5) we obtain the series

$$\Delta C_0 = b\Delta Y_{-1} = 0$$

$$\Delta C_1 = b\Delta Y_0 = b\Delta I$$

$$\Delta C_2 = b\Delta Y_1 = \Delta I(1 + b)b$$

$$\Delta C_3 = b\Delta Y_2 = \Delta I(1 + b + b^2)b$$

$$\cdot$$
$$\cdot$$

$$\Delta C_n = b\Delta Y_{n-1} = \Delta I(1 + b + b^2 + \cdots + b^{n-1})b.$$

We can say, therefore, that

$$\frac{1}{1 - \dfrac{\Delta C_n}{\Delta Y_n}} = \frac{1}{1 - \dfrac{\Delta I(1 \; + \; b \; + \; b^2 \; + \cdots + \; b^{n-1})b}{\Delta I(1 + b + b^2 + \cdots + b^n)}}$$

$$= \frac{(1 + b + b^2 + \cdots + b^n)}{(1 + b + b^2 + \cdots + b^n) - (b + b^2 + \cdots + b^n)}$$

$$= (1 + b + b^2 + \cdots + b^n)$$

$$= \frac{\Delta Y_n}{\Delta I}.$$

This establishes the validity of Hansen's point that the "arithmetic" multiplier relationship holds for every period after the initial departure from equilibrium.

That the arithmetic multiplier converges on the true multiplier so long as b lies between 0 and $+1$, follows from the fact that

$$\frac{\Delta Y_n}{\Delta I} = 1 + b + b^2 + \cdots + b^n.$$

The right-hand side of this expression, being the sum of the terms in a geometric progression, converges on $\dfrac{1}{1 - b}$ so long as b lies between 0 and $+1$.

II. THE TRANSITION BETWEEN EQUILIBRIA

The lag version of the multiplier model implies that the departure from equilibrium caused by the permanent increase in Investment will be followed by a gradual approach to a new, higher equilibrium provided that b lies between 0 and $+1$. In discussing the passage from the old to the new equilibrium, Hansen makes the point that, throughout the transition, there will be a discrepancy between *desired* Saving and Investment. Only when the new equilibrium has been reached will the equality between desired Saving and Investment, which characterized the original situation, be restored.[2]

What needs to be added here is that, while there are definitions of the term "desired saving" for which this point is valid, there is at least one defintion— the most straightforward—for which it is not.

Let us begin by considering two definitions of "desired saving" for which Hansen's point is valid. Denoting desired saving in period n by S_n^D and desired consumption in period n by C_n^D, the first of these definitions is given by:

$$\begin{cases} S_n^D = Y_n - C_n^D \\ C_n^D = a + bY_n \end{cases}$$

or by

$$S_n^D = Y_n - (a + bY_n).$$

The idea behind this definition[3] appears to be that, while the consumption

[2] See Hansen, op. cit., page 114.

[3] It seems clear that this is the definition with which Hansen is working.

planned for period n is related to the Income of period $n - 1$, (this being the meaning of the first equation of the model) the consumption *desired* for period n need not be. On the contrary, the probability is that the consumption desired for the current period bears some definite relationship to *current* income; and that plans are based on past income only because this is the best available guide to what current income will be.

It is clear that, if this definition of desired saving is employed, it is the case that desired saving is equal to investment only in equilibrium. As we have seen, the lag version of the multiplier model tells us that

$$Y_n = a + bY_{n-1} + I_n$$

or that

$$(6) \qquad Y_n - (a + bY_{n-1}) = I_n .$$

But the expression on the left hand side is identical with desired saving, as defined, only if $Y_n = Y_{n-1}$. That is, desired saving and investment will be the same period by period only if the system is in equilibrium.

A second definition[4] for which Hansen's point is valid is given by

$$\begin{cases} S_n^D = Y_{n-1} - C_n^D \\ C_n^D = a + bY_{n-1} \end{cases}$$

or by

$$S_n^D = Y_{n-1} - (a + bY_{n-1}).$$

This definition is based on a more straightforward interpretation of the consumption function than the last. In this case, the view taken is that, if households plan a certain consumption for the current period, that is, presumably, because they desire it; in which case the function giving planned consumption for the current period will also give desired consumption. On the other hand, it is less straightforward than the last in that it adopts the view that, since desired consumption in the current period is based on Income in the preceding period, it should be thought of as, in a sense, "coming out" of that Income; and should be subtracted from it, therefore, in order to find the desired saving of the current period.

On this definition, too, desired saving equals Investment only in equilibrium since the expression

$$Y_{n-1} - (a + bY_{n-1})$$

which defines desired saving, is identical with the left-hand side of equation (6) only if $Y_n = Y_{n-1}$.

A third possible definition of desired saving is given by

$$\begin{cases} S_n^D = Y_n - C_n^D \\ C_n^D = a + bY_{n-1} \end{cases}$$

or by

$$(7) \qquad S_n^D = Y_n - (a + bY_{n-1}).$$

[4] It will be noticed that this definition is Robertsonian in character.

This definition gives the same straightforward interpretation to the consumption function as the second and takes the same straightforward view as the first as to the Income from which desired consumption must be subtracted.

By comparing the right-hand side of equation (7) with the left side of equation (6) we see that, on this definition, desired savings equals investment both when $Y_n = Y_{n-1}$ and when $Y_n \neq Y_{n-1}$, i.e. both in and out of equilibrium.

Thus, whether we can say that desired saving equals Investment only in equilibrium depends on the way in which we have chosen to define desired saving. The statement is true on certain definitions and not true on others.

III. THE "LOGICAL THEORY" OF THE MULTIPLIER

The discussion of the preceding sections has centered on the lag version of the multiplier model. We turn now to a point made by Hansen in connection with the other version of this model—the version which postulates a lagless consumption function.

In discussing this lagless version, Hansen points out that, in this case, unlike the other, the "true" multiplier relationship holds good continuously. That is, in this case, the relationship

$$(8) \qquad \frac{\Delta Y_n}{\Delta I_n} = \frac{1}{1 - b}$$

holds for the period of the disturbance, period 0, and for all subsequent periods. This amounts to saying, of course, that, in the lagless case, the system moves immediately to its new equilibrium position[5]; the disturbance from the original equilibrium and the attainment of the new one both occur in period 0.

That the lagless version of the model does, in fact, lead to equation (8) is easily seen. In this case, the model reduces to

$$(9) \qquad Y_n = a + bY_n + I_n$$

and subtracting equation (2) from equation (9) we get

$$\Delta Y_n = b\Delta Y_n + \Delta I_n$$

which leads directly to equation (8).

Having pointed out that National Income will be always in equilibrium in the lagless case, Hansen adds that this does not necessarily mean that it will remain at a constant level in the period after the disturbance. It will do so if b, the marginal propensity to consume, remains unchanged. But if b changes the equilibrium National Income corresponding to I' will change also. Thus, while National Income will be continuously in equilibrium it may be a "moving" equilibrium.[6] This is perfectly correct but needs elaboration to avoid the confusion that may possibly arise from the use of the phrase "moving equilibrium."

The term, "moving equilibrium," has been used recently by Hicks and others to describe a state of affairs where the value of each variable in any period is proportional to its value in the preceding period. Now, the shifting equilibrium

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[5] It is interesting to observe that this is so even if b exceeds $+1$.

[6] Hansen, op. cit., pp. 112 and 113.

which Hansen has in mind can be a "moving equilibrium" in this sense but need not be.

To assist in formulating the conditions under which Hansen's shifting equilibrium will be a moving equilibrium in the above sense, let us denote the marginal propensity to consume in period n by b_n and the marginal propensity to consume in the preceding period by b_{n-1}. It then follows from equation (9) that, for any period after the disturbance,

$$Y_n = \frac{a + I'}{1 - b_n}$$

and

$$Y_{n-1} = \frac{a + I'}{1 - b_{n-1}},$$

Together these expressions give

$$(10) \qquad \frac{Y_n}{Y_{n-1}} = \frac{1 - b_{n-1}}{1 - b_n}.$$

From equation (10) it follows that the National Income of any period after the disturbance will be proportional to the National Income of the preceding period only if there is a proportional relationship between the marginal propensities to save of the two periods.

It would appear, therefore, that the changing equilibrium which Hansen has in mind will be a moving equilibrium in the Hicks sense only if the marginal propensity to save is changing by a constant percentage rate from period to period.

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A CASE STUDY OF PRODUCT DISCOVERY AND INNOVATION COSTS*

INTRODUCTION

Many contemporary American economists are enamored with a new version of economic determinism. Originating in the speculations of Schumpeter and elaborated upon by his many followers, this new doctrine holds that modern technology demands vast business concerns. Since bigness inevitably means fewness in most industries, market concentration and consequent diminution of price competition are inevitable. But, say exponents of this doctrine, since this decline in competition is fostered by irrepressible technological forces, we should not mourn its passing. Instead we should welcome its replacement by a new, more vigorous, and socially more desirable kind of competition. The few remaining firms are better able to engage in product research and innovation, which are the motors responsible for lifting our steadily rising standard of living.

At the very core of this new doctrine lies the assertion that only big firms can afford the large scientific and technical staffs dictated by modern technology.

Galbraith puts this thesis well when he says: "There is no more pleasant fiction than that technical change is the product of the matchless ingenuity of the small man forced by competition to employ his wits to better his neighbor. Unhappily, it is a fiction. Technical development has long since become the preserve of the scientist and the engineer. Most of the cheap and simple inventions have, to put it bluntly, been made. Not only is development now sophisticated and costly but it must be on a sufficient scale so that successes and failures will in some measure average out."[1]

Many economists are riding this thesis hard. So hard and convincingly, in fact, that many fellow economists not personally engaged in this area of economics, as well as lay listeners, have accepted it unequivocally. Many apparently have inferred that this is not merely an economic hypothesis explaining the trend toward increasing bigness, but is actually an economic law proven by irrefutable empirical evidence.

But such faith often is based more on myth than reality. While this doctrine is often displayed in an imposing theoretical box, surprisingly the box itself contains only fragmentary pieces of factual evidence. And of course, many economists recognize this. Professor Edward Mason, alluding to the contention that big firms have been responsible for most of our significant product and process innovations, warns that actually "this is something about which we know next to nothing."[2]

I do not propose here to undertake a wholesale empirical testing of this doctrine. Mine is a much more pedestrian task. I wish to present some generally unknown—at least publicity—facts about the product most often cited as an obvious example—or proof—of product discovery and development made possible only by industrial bigness. This, of course, is the case of Nylon.

THE NYLON MYTH

The discovery and commercialization of nylon has become a symbol, not only of Du Pont's technological genius but of a "new era" of technical advance. For example, David Lilienthal, speaking well for those who believe that "size is our greatest functional asset," asserts: "Most significant research and development requires large resources and often a long period of time during which no results are forthcoming." To support this generalization, he cites only one concrete example of just how large such "resources" need be. Like most, he cites nylon as the classic case of how bigness has been required to discover and innovate. He says: "Du Pont spent $27,000,000 over a thirteen-year period before a bolt of nylon could be sold."[3] Similarly, A. D. H. Kaplan, in his *Big Enterprise in a Competitive System*, puts the costs of bringing nylon to the profitable market stage at $30,000,000.[4] The implication of such statements is that Du Pont

[1] John K. Galbraith, *American Capitalism* (Boston: Houghton Mifflin Co., 1952), p. 91.

[2] Edward Mason, "The New Competition," *Yale Review*, XLIII (Autumn, 1943), p. 44.

[3] David E. Lilienthal, *Big Business: A NEW ERA* (New York: Harper & Bros., 1953), p. 69.

[4] A. D. H. Kaplan, *Big Enterprise in a Competitive System* (Washington: Brookings Institute, 1954), p. 203. He cites only one other example: the vacuum can, which he reports cost $8 million.

had to spend many millions before finding out whether nylon would prove profitable. Some reports explicitly draw this inference. Most recently, *Time* magazine in a feature article on "The Age of Research" said: "When Dr. Carothers found a way to simulate the long-chain molecules found in natural silk, Du Pont applied his findings to the development of nylon, which reached mass production in 1939, after five years and $27 million for applied research."[5]

Du Pont has itself consistently fostered the notion that it spent and gambled large sums before reaping any rewards from nylon. President Crawford Greenwalt put it this way: "There were long years of difficult and sometimes bitterly disappointing research and development costing six millions of dollars in the aggregate. There were $21,000,000 spent on manufacturing facilities before commercial sales were made."[6] He characterized this as a "gamble totalling $27,000,000" and requiring a ten-year wait before his company knew "whether it had won or lost."

Reliable factual data suggest that much of the talk about the vast costs and unavoidable risks involved in discovering, developing, and commercializing nylon is a myth. Let us see what part of the nylon story is myth and what part is fact.

DU PONT DISCOVERS NYLON

Du Pont research that ultimately led to nylon began about 1928. The year before, under the direction of Dr. C. M. A. Stine, Du Pont initiated a program of fundamental research. In accordance with the primary objective of this program, which was to discover scientific knowledge regardless of immediate commercial value, Du Pont began a number of chemical explorations. One of these projects was headed by Dr. Wallace H. Carothers. Carothers chose to continue work he had begun at Harvard University on condensation polymers.[7]

His early work at Du Pont yielded considerable fundamental knowledge of polymerization (how and why small molecules unite to form "giant" molecules), which initially was only of "academic value."[8] Then, "quite by accident," one of his assistants made a fortunate discovery. President Greenwalt explained what happened as follows: "Well, one day one of Carothers' associates was cleaning out a reaction vessel in which he had been making one of those polymers, and he discovered in pulling a stirring rod out of the reaction vessel that he pulled out a fiber; and he discovered its unusual flexibility, strength, and the remarkable ability of these polymers to cold draw."[9] This discovery had obvious commercial implications for Du Pont, which already was in the textile business, as a rayon maker. Although this particular fiber was not very strong or elastic, and was softened by hot water, its discovery suggested that some

[5] "The Age of Research," *Time*, July 9, 1956, p. 75.

[6] Study of Monopoly Power, Hearings before Subcommittee on House Committee on the Judiciary, 81st Congress, First Session (1950), Serial 14, Part 2-A, p. 546.

[7] Testimony of Crawford Greenwalt, *U. S. vs. Imperial Chemical Industries, et al.*, 100 Fed. Supp. 504 (1951), printed testimony, p. 1881.

[8] Dr. James K. Hunt, "Nylon: Development, Physical Properties, and Present Status" (Wilmington: E. I. du Pont de Nemours & Co., undated), p. 1.

[9] *U. S. vs. Imperial Chemical Industries, op. cit.*, p. 1881.

related compound might produce a product possessing characteristics suitable for commercial fibers.[10]

Du Pont followed up this discovery with "a concentrated effort in the laboratory to synthesize a polyamide which might form the basis for a commercial textile fiber."[11] Carothers and his associates tried time and again to synthesize a new superpolymer possessing suitable textile qualities. At one time prospects were so dark that Carothers discontinued his investigations.[12] Fortunately, however, he resumed his search, and on February 28, 1935, he synthesized the superpolymer used in manufacturing the first nylon.[13]

The original nylon, initially referred to as Polymer or Nylon 66, was made in the laboratory by extruding a synthetic fiber through a spinneret improvised from a hypodermic needle. Du Pont scientists and engineers next tackled the job of bringing this laboratory-made fiber into commercial production. During the following two years the company's efforts involved "the development on a laboratory scale of the manufacturing processes for the intermediates, the polymer and nylon yarn, and the development on a semi-works scale of the chemical engineering data for the erection and operation of a large-scale plant."[14] Upon completing its semi-works plant and after pronouncing nylon commercially feasible, Du Pont announced on October 27, 1938, its intention of building a new commercial plant at Seaford, Delaware, with an annual capacity of 3,000,000 pounds. Before the first unit of this plant began operating, late in 1939,[15] Du Pont decided to increase its capacity to 4,000,000 pounds; and before the plant was completed, its capacity was increased to 8,000,000 pounds.[16] Early in 1940 Du Pont announced plans to construct a second plant at Martinsville, Virginia; and in July, 1948, it opened a third plant at Chattanooga, Tennessee.[17] By 1948, Du Pont's nylon sales had grown to $120,000,000; and Du Pont estimated its earnings before taxes at $37,900,000 on an operating investment of $83,900,000.[18] Since July, 1948, when its Chattanooga plant began production, Du Pont's nylon sales and profits undoubtedly have increased. As late as 1950 a "gray market" existed in nylon.[19]

DISCOVERY COSTS

Up to this point I have touched mainly on the most important technical steps involved in bringing nylon to the public. But the most important questions for us here are: What did various steps in the discovery and development processes

[10] Hunt, op. cit., p. 2.

[11] Dr. E. K. Bolton, "Development of Nylon," Industrial and Engineering Chemistry, XXXIV (January, 1942), p. 5.

[12] Hunt, op. cit., p. 2.

[13] Bolton, op. cit., p. 6.

[14] Ibid.

[15] Hunt, op. cit., p. 4.

[16] Bolton, op. cit., p. 9.

[17] Hunt, op. cit., p. 4.

[18] U. S. vs. E. I. du Pont de Nemours & Co., 126 Fed. Supp. 235 (1954), Government Exhibit 577.

[19] "The Story of the Greatest Chemical Aggregation in the World: Du Pont," Fortune, XLI. (October, 1950), p. 111.

cost, and what risks did Du Pont have to incur? Did Du Pont really take, as President Greenwalt says, a $27,000,000 gamble requiring a ten-year wait before it knew whether it had won or lost?

Public statements on the costs and risks in bringing nylon to the commercial stage are, at best, misleading, and most commonly entirely inaccurate. But a document made public in a recent antitrust case sheds considerable light on this question. In 1938 a representative from Imperial Chemical Industries, Du Pont's leading international patents and process partner, made two visits to Du Pont for the specific purpose of studying the discovery and development of nylon. This representative reported to ICI that Du Pont's research expenditures in the early years of nylon research "were relatively modest, but as promising indications evolved the pace was quickened."[20] According to this source, by the time Du Pont had reached the point where it could build a pilot plant, expenditures amounted to $787,000. The pilot plant, which was completed in 1938, was designed and built at a cost of $391,000.[21] Another "development" cost cited by this source was approximately $782,000 (about the same as that spent on all pre-pilot-plant research) for sales development.[22] ICI's representative concluded that "the total cost of research and development can thus be taken at [$1,960,000]."

PLANT INVESTMENTS

In 1938, after completing its pilot plant, Du Pont authorized the expenditure of $8,600,000 to build a 3,000,000-pound-per-year nylon yarn plant.[23] Apparently this plant did not represent much of a gamble, or require great additional development expenditures. Dr. E. K. Bolton, Du Pont chemical director, later said of this plant: "Except in size, the Seaford plant was practically a duplication of the semi-works plant in all details. Each step of the process and the equipment for it had been worked out thoroughly on a semi-works scale, and it was unnecessary to gamble with untried methods and equipment on a full-plant scale."[24] Moreover, the market development expenditure apparently indicated a satisfactory demand for nylon before work began on the full-scale

[20] Imperial Chemical Industries memorandum from Chairman to Mr. Cushion, U. S. vs. Imperial Chemical Industries, *op. cit.*, Government Exhibit 626, p. 2317. I believe the statements made by this individual can be accepted as an accurate account of the facts because of the close relations existing between these two concerns for about half a century. In any event, there does not seem to be any reason to believe that Du Pont would have intentionally understated its research and development costs to ICI. After all, Du Pont wanted to impress ICI with the fact that it was a very valuable patent and process partner. And the record indicates the ICI visitor was very much impressed on this score. For a discussion of the close and continuing technical relations between ICI and Du Pont, see Willard F. Mueller, "Du Pont: A Study in Firm Growth" (Unpublished Ph.D. dissertation, Vanderbilt University, 1955), pp. 234–56, 318–24.

[21] These figures were originally expressed in pounds sterling. I have converted them to dollars at the then current exchange rate of $4.89 per pound.

[22] *Ibid.*

[23] Williams Haynes, *American Chemical Industries* (New York: D. Van Nostrand Co., 1954), pp. V, 36.

[24] Bolton, *op. cit.*, p. 9.

plant. According to Du Pont's Dr. Bolton, "Hosiery manufacturers had evaluated the yarn and pronounced the stockings to be of commercial utility."[25]

HOW GREAT THE GAMBLE?

Thus, the original "gamble" did not involve the tremendous sums cited by Greenwalt. When Du Pont began building its first nylon plant, in 1938, the nearly $2,000,000 it had spent up to then on original research, product development, pilot plant and market development, evidently indicated that the odds were very favorable to Du Pont. Further noteworthy is the fact that Du Pont's original plant involved an investment of only $8,600,000. As noted above, the prospects for nylon's success appeared so bright that even before completing this original plant, late in 1939, Du Pont began plans for still more capacity. It was this original plant plus this additional capacity that involved a total investment of $21,000,000. The decision to increase annual capacity from three million pounds to eight million pounds before the original plant was completed, clearly was motivated by expectations of greater demand than originally anticipated, not by the demands of economies of large-scale plant. Therefore, it seems clear that if demand had not warranted this immediate expansion, it would not have been necessary to make the $21,000,000 plant "gamble" referred to by Greenwalt.

We may summarize the costs of the various steps in bringing nylon from the imaginative mind of Dr. Carothers to the consumer as follows:

1. *The big gamble*—fundamental and pre-pilot plant applied research: $ 787,000
2. *Measuring the gamble*—pilot-plant development and construction: 391,000
3. *Minimizing the gamble*—market development: 782,000
4. *Normal business risk*—initial commercial plant construction: 8,600,000

Total research, development and initial plant investment: $10,560,000

Of course, Du Pont invested millions more in expanding its nylon capacity. And it probably later spent large amounts developing improved production techniques and finding new uses for nylon. But these costs—or more properly investments—were incurred with full knowledge that the odds favoring success were good: nylon had been proven technically feasible, commercially acceptable, and economically profitable. In truth, Du Pont's profits from nylon grew so rapidly that in 1948 alone they were over three times as great as Du Pont's initial plant investment and total discovery and development costs.

Thus, although the research, market development, and initial plant investment costs certainly were substantial, they evidently were much less than is generally asserted; neither were the risks as great as often claimed.

CONCLUSIONS

Of what significance are these findings? Obviously, case studies alone can not prove or disprove theories. No such grand claims are made for this study. But

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[25] *Ibid.*

it has shown that even the apparently most obvious evidence supporting the doctrine that only vast firms can make important product discoveries and innovations may not be at all obvious when more of the facts are known. Certainly, blind faith in this doctrine is not warranted if one of the largest bits of the all too fragmentary evidence allegedly supporting it crumbles when aired to objective study.

Moreover, it is well to recall here that the Du Pont that initiated the research leading to nylon was quite small by today's standards. Its sales in 1928 were only a fifteenth as large as they are today. In 1948 its nylon sales alone were as large (though in inflated dollars) as its 1928 sales of all products.

Let us, therefore, be careful not to confuse bigness resulting, in part, from past product discovery and innovation as *cause* instead of *effect*. A strong case can be built to explain and justify many of our present firms' (including Du Pont's) vast size as the product of their past scientific ingenuity and innovative aggressiveness. But that is a far different proposition than saying that their present size is prerequisite to further scientific advance.

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MEMORIAL

DUNCAN CLARK HYDE

1896–1957

Duncan Clark Hyde, Professor of Economics at the University of Virginia since 1929, died suddenly at his home on the evening of February 26, 1957. He was sixty years of age. Although he had suffered a heart attack a year earlier, he had been quite active during the present session and had met his classes regularly. On his final day he taught a graduate seminar class in Economic History and referred jokingly to the fact that he had kept the students for a half hour beyond the scheduled period. During the day he had conversed with his colleagues and friends in his usual jovial manner.

In the death of Professor Hyde the economics profession and the Southern Economic Association lost a great teacher and a true scholar and friend. Not only was he a vigorous and stimulating lecturer, but also he went beyond the call of duty in his willingness to devote his time and strength in the discussion of student problems. His first interest was to aid and inspire his students. Recognizing this fact, there was a spontaneous movement for an annual scholarship award at the University of Virginia in his memory. The proposed memorial fund has been notably successful and an award will be made annually to the senior in Economics who holds the highest scholastic record.

D. Clark Hyde (as he preferred to be known) was born in Quebec, Canada, on October 13, 1896. His forbears on both sides of his family emigrated from Scotland several generations earlier. For many years his father served as Deputy Treasurer of Quebec Province. His people held in high esteem rigid standards of personal conduct and a strong devotion to education and Christian ideals. Upon the completion of his secondary education he enrolled at McGill University where he came under the influence of the notable writer and teacher, Stephen Leacock, and probably in part through his influence, was led to study economics as a field of specialization. He was a first honor graduate of McGill in the class of 1917. In the autumn of that year he entered the graduate school of Harvard University and was awarded the Ph.D. degree in 1921. There he was a student of C. J. Bullock, under whom he wrote his dissertation, T. N. Carver, F. W. Taussig, Edwin F. Gay and E. E. Day. He served as Instructor in Economics in 1920–1921.

Following the completion of his work at Harvard he became Assistant Professor at Knox College for one year and thereafter for six years accepted the post of Professor of Economics at Keio University, Tokyo, Japan. His life there was a memorable experience and he never forgot numerous phrases of the Japanese language and the customs of the people. His appointment at Virginia made it possible for him to concentrate in the field of his chief interest—economic history. In this area he read widely and over the years had prepared voluminous notes covering the entire range of economic development

from the first dawn of civilization to the current era. His primary interest lay in the realm of economic institutions, human behavior and historical approach. He saw little of value in esoteric studies of economic theory which could never be brought within the range of public understanding and he was fond of quoting the epigram, "Theory is the quintessence of experience."

His goal as an economist was formed at an early period of his teaching and he never found reason to change it. In a letter to me written from Keio University in 1928 he said: "More and more I have become interested in economics as an agency for social and economic betterment. My teaching here has made me try to teach economic history as a series of actual problems that faced mankind and demanded solution. I like to trace the origins of each in actual solutions, discuss attempted solutions, describe the resultant institutions, analyze the theories that were evolved to explain them and finally, mark the changes in conditions. This type of work seems to me to furnish a good preparation for a course of reform on the economic welfare of society." In the same year, he wrote to Professor Bullock: "More and more I have come to feel the necessity of directing the student's attention to actual situations and problems and of trying to make him realize that the end of economics is the understanding of economic forces that may be seen in their manifestations in everyday life."

His long period of service as an officer in the Southern Economic Association brought him just satisfaction and pride. He was elected Secretary-Treasurer from 1935 to 1941 and was the fifteenth President in 1943–1944. During these war years the Association did not hold an annual meeting, and so he was deprived of the opportunity to deliver a presidential address. He was especially concerned about the progress of the Association in the war period, when so many economists were on leave, and it brought him immense pleasure to observe at the meeting held in Raleigh in 1956 the surge of growth that has come since the War.

Professor Hyde was the author of several articles in the field of Economic History and was joint author of a book on "State Grants-in-Aid in Virginia." His dissertation dealt with the fiscal system of Canada prior to 1914. He also wrote an article on the History of the Currency and Coinage in Canada which was published in the early twenties. Two of his articles appeared in the Southern Economic Journal in 1936 and 1937. These dealt with National Economic Policy in relation to the American Tradition. He found that, with few exceptions, traditional economic policy has relied upon competition, individual initiative, "abundant opportunity and expanding life." He concluded, however, that "the Supreme Court has acquired the power to limit policy under the Constitution," and he felt that a definite break came with the inauguration of the New Deal in the thirties. The new attitude was one of "purposeful planning." His sympathies clearly lay more with the "individual liberty of the past than with the uncritical acceptance of state action." But he recognized the fact that problems of the first World War and of the depression had forced a reexamination of the aims and methods of national policy. With the coming of the depression the War experience was not allowed to lapse back into a mere historical tradition and the national interest emerged above local interests.

All of us are the poorer for his passing. He was a man of the highest standards of personal rectitude. He was kindly disposed, friendly, generous and fair-minded. In his desire to lead his students onward to a useful and rewarding life he was exceeded by none. His wife, Miss Varina Rhodes of Charlottesville, whom he married in 1931, died in 1952. His only surviving close relative is a sister, Miss Alfretta Hyde, of Quebec.

University of Virginia   TIPTON R. SNAVELY

BOOK REVIEWS

Location and Space Economy: A General Theory Relating to Industrial Location, Market Areas, Land Use, Trade, and Urban Structure. By Walter Isard. Cambridge, Mass.: Technology Press of Massachusetts Institute of Technology and New York: John Wiley & Sons, 1956. Pp. xix, 350. $8.70.

Isard notes on page 24 that "both time and space must be vital considerations in any theory of economy." On page 25 he writes that economists "continue to abstract from the element of space and in so doing they are approaching a position of great unbalance." So long as there prevails an exclusion of space in both partial and general equilibrium theory, a book such as the one under review will have appeal only to readers of special interests. Its appeal, however, should be much wider that this. Let me suggest a few reasons why.

Omission of spatial concepts permits regard of market types on a time continuum alone. This means that the locations of firms and households are ignored and that the time analyzed markets barely may approximate much less duplicate reality. While a good friend once offered me the opinion that relevance and irrelevance are less important than whether a theory provides some answer for practice, Sir Isaac Newton's "vast immovable mass" assumption also helped explain many phenomena but not so many as would a more realistic working hypothesis. When the lesson of space takes hold in economics, it appears probable that the polypolistic market types, especially the perfect polypoly, will be relegated to a place of remote interest. Certainly, the ideas of zero profit long-run equilibriums and of general nonprofit equilibrium will have to be played down. Space opens up new trends for capitalism just like time and motion relativity provide new insights to the universe. Appreciation that long-run economic profit situations dominate the economy will require a new normative economic theory to serve as a model on which to peg our policy judgments.

We find in the text in question a stress on methods of analysis, and in certain cases (particularly the discussion on trade theory) a suggestion of how the inclusion of space affects traditional economic theory. Isard focuses main attention on the concept of transport inputs. He integrates this concept with production economics through use of the substitution principle. Like capital inputs, transport inputs can be thought of as indicating roundabout production. The transport rate is its price. Lowering of rate involves spatial widening of production; raising of rate entails spatial contraction. The location decision requires discovery of the transport optimal point. At this situs, correct substitution prevails between pairs of transport inputs. Launhardt, Predöhl, and Palander among others serve as forerunners. To each goes ready and full documentation by the author.

After establishing basic concepts and applying the substitution principle to transport inputs, other kinds of orientation are cited. Labor, power, rents, and other costs are held to be substitutable for transport outlays.

It is at this point that Isard breaks with earlier writings. Whereas his *Atomic*

Power stressed costs alone (see review this journal, January, 1953), the present volume contains no such limitations. His substitution principle extends to the matter of demand. Shifting locations and change in market area divisions play vital roles.

It is from the concept of market areas and certain other developments that Isard moves forward into trade theory. In an intricate yet cleverly done framework, Isard both meets criticisms levelled at traditional trade theory and enlarges the range of location theory. A change in the distance variable is shown to be sufficient to revamp the geographic flow of commodities. The relation between international land use patterns and urban-rural land use patterns is suggested at this point in the text.

All in all *Location and Space-Economy* is excellently done. In particular, a last chapter which synthesizes previous discussions in graphic form is brilliantly arranged. Because it is common vogue among reviewers to have at least a few critiques to make about a text, I find myself in the position of reaching for things of this type which readers should be pre-warned against. But if any vital criticism is really relevant, I can not find it. All one can say in this area is that readers who seek "elementary" introduction to location theory should look elsewhere; readers who want to learn how plants are located, and the place and influence of planning commissions, power company development bureaus, grants to business, tax policies, etc., in site-selection, should look elsewhere; readers who are concerned with end implications of spatial concepts on economic theory will find some suggestions in the present book, but will be left largely to their own imagination. In short, the author has the particular and most important goal of integrating production economics with location economics. He sticks to this rather closely and does not branch off into side paths. And, who can ever object to this noteable accomplishment.

These above thoughts bring us to the only critique which might be entered about the way the selected subject is developed. It is this reviewer's belief that the theory of locational interdependence is not given as much room in *Location and Space Economy* as possibly it deserves. Perhaps the underplaying of locational interdependence is due to the tricky nature of this subject which makes it appear ineffective in the average case. But the fact is that it does have relevance to all locations, which condition is often lost in the haze of price policy. Price policy highlights or hides the endeavor to magnify demand by location. When pricing is f.o.b. mill, the tendency prevails to disperse; firms acquire advantage in monopolizing market segments. Under discriminatory pricing (e.g., basing point systems), gains from dispersion are less pronounced. Small firms which seek phantom freight by location at points of high delivered price alone clearly appear to cater to the principle of separation from rivals. In similar manner, small retail shops and department stores may locate under the umbrella of higher prices at points distant from the downtown shopping areas. When price is the same over large areas or regions, there is not any really effective locational interdependence factor as such. The sales (or revenue) increasing factor that follows from *proximity* to selected buyers is singularly at

play in this case. Perhaps some discussion or analysis of this type might have been added in *Location and Space-Economy* with advantage. But, it is always easy for a reviewer to increase the size of another writer's book. The really difficult task is for the author to cover adequately a given objective in relatively small space.

Within the objective selected by Isard, he accomplished his end with plenty to spare. Make no mistake about it, his objective is vital, his analysis pattern convincing, and his impact on theory developing. I wish I could say that every economist will want to read this treatise, but I suspect it will be only some decades in the future before this situation is realized.

Robbins College   MELVIN L. GREENHUT

A Study on the Pure Theory of Production. By Sune Carlson. New York: Kelley and Millman, 1956. Pp. ix, 128. $4.50.

We are once more indebted to Kelley and Millman for reprinting an economic classic. Let us hope for the continued prosperity of this lonely publisher who caters to the tastes of the economic scholar.

Carlson's study is well known. It presents the classical theory of production as it was just before the appearance on the scene of Hicks and Samuelson, and it is the best source for the theory at that stage. I think it would be rather pointless to add further to the evaluation of Carlson's essay as such. Therefore, I shall take this opportunity to underscore the great transformation of the subject that has occurred in the twenty years since he wrote. It is certainly unfair to do so, but from sheer mischief I first quote: "... this study represents, I hope, a framework for the pure theory of production which further researches will modify and fill out but not substantially change" (p. 126).

The large subsequent developments have been in two directions. On the one hand, Hicks and Samuelson and later the activity analysts have brought the theory into a more meaningful relation with the market situation. On the other hand, economizing aspects of the firm's problems of internal management have been analysed with techniques which are reminiscent of the operation of competitive markets.

The contribution of Hicks and Samuelson was to use stability conditions (or secondary conditions) for profit maximizing to deduce the effect of price changes on the firm's supply of output and demand for factors. Samuelson even asserts that all the meaningful theorems depend on the secondary conditions. More recently, the activity analysts have explored the significance of convexity assumptions for the achievement of a welfare optimum on competitive markets in the sense of Pareto. They have also tried to develop assumptions which will imply that a competitive equilibrium in fact exists, and which are not too restrictive. In the wake of these developments, a theory of production which neglects the properties of the market equilibrium seems quite rare.

In the other direction, of internal management of the firm, the classical theory left matters to the engineer. But it is a rather tall order to expect the engineer to provide the firm with a production function, and a differentiable function at

that. Indeed, it is likely to be extremely wasteful, in the face of market prices, to compute large irrelevant reaches of a production function. The engineer is likely, in fact, to have available information on certain discrete partial operations in terms of their inputs and outputs. The problem is in what proportions to combine these. The mathematical programmer searches directly for a maximum profit program. His method for doing so may involve determining accounting prices for the fixed facilities of the firm and the calculation of the profitability of different processes at these prices. Thus the methods of the competitive market reappear within the firm's own management. In this respect, it is interesting to note that R. G. D. Allen in his recent text devotes at least ten times as much space to the application of linear programming to the firm as to all the classical theory of production.

Research nowdays is also moving beyond the classical bounds in tackling problems of uncertainty as they impinge on production planning. Up to now the greatest progress has been made in the management of inventories. Work is rapidly progressing, however, on the scheduling of production and the planning of investment in facilities. Thus the theory of production continues to grow in interest and significance.

The major contribution made by Carlson to production theory is his treatment of production overtime as a case of joint production. The method is used with greater generality, however, in Hicks' *Value and Capital.* Carlson's very lucid discussion of production isoquants, expansion paths, and function coefficients (associated with increasing, constant, or decreasing returns to scale) has a current relevance to some studies in the theory of economic growth. I do not understand Carlson's reference to advertising services and the services of a patent right as inputs to production (p. 2).

Duke University   LIONEL W. McKENZIE

Studies in the Quantity Theory of Money. Edited and introduced by Milton Friedman. Chicago, Ill.: University of Chicago Press, 1956. Pp. v, 265. $5.00.

The five essays that make up this book represent a bold and, to this reviewer, a successful effort to restore the respectability of the quantity theory. Professor Friedman and four of his students report on the work they have been doing in recent years. There is both a reformulation and a reexamination of the quantity theory. Some may not recognize it in new dress.

Except for Professor Friedman's introductory essay the studies are statistical. Much effort has gone into exploring the validity of hypotheses. In short, the approach is positivistic. Phillip Cagan analyzes very thoroughly six European hyperinflations in the longest and most technical paper of series. John Klein examines the monetary experience of Nazi Germany, finding cause for the apparent failure of quantity theory reasoning to apply. Eugene Lerner summarizes his already published work on inflation in the Confederacy in the shortest but the most readable paper of the book. Richard Selden painstakingly reexamines the data and earlier work on the velocity of money in the United States. All of the papers are models of excellence, and there is enough in any

one to justify a substantial review. Admittedly these brief observations do the authors less than justice.

By commenting briefly on Professor Friedman's introductory essay it may be possible to convey to prospective readers the nature of the approach of the book to monetary theory. In surprisingly few pages Professor Friedman develops a theory of the demand for money using no more mathematics than is indispensable. All is reduced to a scheme of choice. The idea that pervaded much of the older writing on money, namely that velocity is an institutionally determined magnitude, is demolished. The Keynesian apparatus of transactions, precautionary, and speculative demands is also discarded. All this is replaced by a scheme of thought capable of empirical application to the data provided by massive social experiments in monetary mismanagement. Whether readers share Professor Friedman's enthusiasm for the productiveness of this approach remains to be seen. This reviewer is possibly too sympathetic a critic to render an unbiased judgment.

A puzzling feature of the studies is the heavy burden borne by income velocity, a concept which seems to fit poorly into an analytical scheme built upon human choice. Here availability of data may have forced a clumsy tool to be used, but it cannot be denied that both it and such other tools as the empiric methods provides have been fully tested.

Duke University   EDWARD C. SIMMONS

Ruskin and the Economics. By John Tyree Fain. Nashville, Tenn.: Vanderbilt University Press, 1956. Pp. 164. $4.00.

The primary objective of this small volume is to provide a "critical and historical perspective" which will enable the reader to evaluate John Ruskin's contribution to political economy. Although Ruskin is well known both as an art critic and as the author of numerous essays usually subsumed under the heading of "social protest" literature, Professor Fain has attempted to show that Ruskin also deserves recognition for his work in the field of economics. Indeed, Fain not only maintains that Ruskin played an important role as a critic of economic orthodoxy, but he also pleads for a sympathetic study of what he calls Ruskin's "constructive contribution" to economic theory.

In an introductory chapter, the author presents a brief summary of Ruskin's qualifications as a political economist. The general conclusion of these comments is that most modern critics "qualified to judge" the competence of Ruskin in the field of political economy have "shown respect for Ruskin's economic writings." The testimony of such men as William Smart, John Hobson, and Richard Ely are used to support this thesis. On the other hand, Fain states that those "ignorant of the fundamental issues" have usually treated Ruskin's economic views with "amused tolerance or abuse" (p. 37). Perhaps it would be more correct to say that economists with heterodox inclinations have usually been sympathetic to Ruskin's views, whereas those with more orthodox convictions have generally found little of value in Ruskin's works.

Two of Ruskin's criticisms of orthodox economics may be referred to briefly.

In the first place, classical economists are accused of being scornful of Christian morality, an accusation which could only have been made by one who was grossly uninformed about the moral convictions of most classical writers. In this context, Fain makes a revealing observation when he says there is "little evidence that Ruskin read the political economists, none that he read them carefully or with sympathy (p. 48). A second charge of Ruskin's is that orthodox economists unduly emphasized the selfish characteristics of man. Similar criticism of the classical theory of human nature had been voiced by earlier writers, and Ruskin's comments add little, if anything, of a substantive nature to the controversy. His skillful use of invective, however, probably served a useful purpose in forcing economists to scrutinize more carefully some of the basic assumptions of discipline.

The most fundamental of Ruskin's criticisms appears to relate to the narrow scope of classical economics. Thus he insists that classical political economy is a "mercantile economy" rather than a "social economy," because it ignores the "social affections" and substitutes considerations of private gain for those of national gain (p. 46). If he were writing today, Ruskin would probably be among those who insist that economics should borrow more extensively from such social sciences as psychology and sociology.

The concluding chapter of this book contains a lengthy summary of *Unto This Last*, which has usually been regarded as Ruskin's major critical work in the field of political economy. For several reasons, some of which are at least implied in the above comments, Fain thinks Ruskin's effort must be considered a failure if it is judged solely on its merits as a "destructive" work. Fain is convinced, however, that *Unto This Last* should be judged on a different basis, because it contains "in nucleus all the constructive ideas which Ruskin later developed in detail" (p. 100). Space will not permit even a brief summary of these constructive ideas, most of which directly or indirectly relate to the basic problem of the proper scope of economic theory. In any event, this reviewer's opinion is that Fain's appraisal is too sympathetic when he implies that Ruskin's work contains a more or less systematic body of economic theory. Ruskin may be credited, however, with having raised some important problems of scope and method, a contribution which lends support to Fain's thesis that Ruskin was "far too right to have prevailed so little."

Texas A. and M. College   ALFRED F. CHALK

Introduction to Keynesian Dynamics. By Kenneth K. Kurihara. New York: Colmubia University Press, 1956. Pp. iv, 222. $4.50.

The author's avowed aim in this book is "to provide a coherent and compact study of macro-dynamic analysis ..." There is a distinct need for such a book at this time, and the author has labored manfully, but with unequal success, to fulfill this difficult task.

As a general background Professor Kurihara discusses static Keynesian theory in rather complete detail. In the second part, he discusses "dynamic income behaviour," starting with an interpretation of the dynamic multiplier

in which today's consumption depends on yesterday's income. By making to-day's investment depend on yesterday's income the author develops a dynamic multiplier-accelerator relation for determining income changes due to autono-mous changes in investment. While the diagrams and tables are rather clear, the difference equations given seemed to introduce more difficulties than they solved.

Following a presentation of the stability of equilibrium, and the Kaldor model of the cycle, there is an intriguing analysis of inflationary phenomena, doubt-less the best new material in the book. This is followed by a foreign trade multiplier analysis.

In the last section the author considers secular economic dynamics. The core of this material is the Harrod growth equation. It seems to me that the treat-ment of capital accumulation suffers from a confusion of the effects of capital and rate of investment on the marginal efficiency of capital. At one point the author states that "if the rate of interest is brought down to zero ... society ... will still be able to maintain full employment" (p. 193). Yet if saving exceeds investment at full employment income and a zero rate of interest, what is to keep the level of income from falling? The text is silent on this point.

In the last chapter the author deals with the disequilibrating effects of diver-gences between certain growth rates. In most places, the argument seems ac-curate. However, when the author states (p. 204) that " 'overcapacity' output of consumer goods" combined with undercapacity in capital goods leads to in-flation, he appears to be in error. In fact, this situation implies a structural rather than an aggregative disequilibrium, and does not necessarily lead to in-flation.

On the whole, this book does not quite sustain its plan to treat macro-dynamic economics. In fact, the multiplier and supermultiplier analysis cannot explain oscillations around an equilibrium level or trend. Clearly, a text cannot be said to have treated macro-dynamics very fully without a reasonably extended study of multiplier-accelerator relations leading to cycles. In this connection, the exposition of the excellent Kaldor model seems insufficient. On the other hand, the treatment of comparative statics is rather thorough and the study of this topic is extremely helpful as an introduction to economic dynamics. Thus the book brings the reader within the periphery of economic dynamics after devoting the bulk of its attention to comparative statics.

University of Alabama   JOHN S. HENDERSON

The Physiology of Industry. By A. F. Mummery and J. A. Hobson. New York: Kelley and Millman, 1956. Pp. ix, 215. $5.00.

To review in 1957 a thesis first presented in 1889 is to assume that the inter-vening years have had no influence in the subject matter. Since the completion of the original work with Mummery, Hobson published some fifty-three books and hundreds of articles. In these publications he elaborated on the original thesis and supported his arguments with additional logic. The major criticism of the original thesis of "The Physiology of Industry" was that he (Hobson)

ommited any discussion of the maldistribution of income. This was corrected in his later works, and to appraise this short volume of 215 pages as a contribution to anything other than to a history of the development of economic thought is unfair, both to the memory of the author and to the reader.

The reprinting of this volume is a service to students of economics. It allows a student to read at first hand the basis of Hobson's later theory that the cause of business cycles lies in underconsumption. The underconsumption develops because of the undue or excessive application of savings to capital goods. In this brief volume Hobson points out that his concept of savings does not include the mere transfer of funds from the control of one individual to another. Thus Hobson draws a line of demarkation between savings by an individual and savings by society.

If this book is used, as this reviewer has used it in his own teaching, it will be the basis of a lecture in a course in the development of economic ideas. With such use, it can become a gold mine of points of discussion. The influence that it may have had on John M. Keynes can be assumed by quoting Keynes' review of the book "The first and most significant of many volumes in which Mr. Hobson has flung himself against the ranks of orthodoxy ... the publication of this book ... marks an epoch in economic thought."

Another major point to be emphasized is his discussion of production. Hobson indicates to the reader his failure to recognize the contribution of the entrepreneur to production. In the first few pages of his "definitions" is the statement Profit is the payment for the use of capital paid to its owner—there is in this statement no concept of profits as either a reward or as a payment for risk taking. The same chapter affords hours of discussion on Hobson's concept of Supply and Demand compared with the accepted contemporary concept. Instead of considering Supply and Demand as a schedule of bids and asking prices, Hobson defines demand "... is the quantity of money paid for the quantity demanded."

The positive aspects of the book far outweigh the lesser negative ones discussed in the previous paragraph. His Chapters on the "Scope of Production" and "Production and Consumption" are one of the best and most readable criticisms of Mills' orthodox reasoning, and could well be assigned to a student for this very purpose. Another point well worth discussing is his implication that a great deal of additional work must be done on the simple statement that "production minus consumption equals savings." An open sesame to hours of discussion on the effect of taxation on savings as well as the effect of Engel's Law on the productive capacity of the country is afforded by Hobson's discussions of his major theory. This assumption is based on his premise that if production increases indefinitely, and if consumption remains constant, savings must at the same time increase indefinitely. His statement that "If increased thrift induces people to save more in the present, they must consent to consume more in the future" opens another vast vista into the entire question of why are savings made by both individuals and society. This would certainly develop into a comprehensive discussion of the use of money as a medium of

exchange and in order to be clarified go into a detailed account of the problems of the monetary system and the maldistribution of income.

The book could have been tremendously enhanced had there been an introduction stating the thesis in its proper setting and showing how this volume was the basis for further expansion of the basic ideas. This reprint has performed a valuable service, in that it has made a collector's item accessible to all students of economic theory.

University of Miami   JOHN P. WILCOX

Population Theory and Policy. By Joseph J. Spengler and Otis Dudley Duncan (eds.). Glencoe, Ill.: The Free Press, 1956. Pp. x, 522. $7.50.

For teachers of courses in population theory and problems this book of readings should provide a wealth of supplementary material to enrich the course. It is even possible that some teachers may decide to use this book as a basic text, since there is a careful organization of the articles by subject matter and a well-written brief general statement of introduction at the beginning of each of the nine sections. This volume is being followed by a second, entitled *Demographic Analysis: Selected Readings*, which will present a variety of demographic information and provide examples of research dealing with concrete problems.

Thirty-eight articles on various aspects of population theory and policy have been selected from a variety of journals and other sources. Very few of the readings are more than thirty years old and in large part they have been written since the end of World War II. Reliance upon current material gives the book a freshness which should appeal to the undergraduate student. It is almost with a shock that the reader comes to one of the few articles written during the depression of the thirties and recognizes the changes which have taken place in our assumptions regarding trends in the birthrate. Whelpton's projection on page 464 of a maximum population for the United States of 154,000,000 in 1985 is an illustration of this change in viewpoint.

The nine sections into which the various readings are grouped will indicate the scope of the material: (1) Development of Population Theory, (2) The Role of Theory in Population Studies, (3) Theory of Population Growth, (4) Population, Resources, Technology, and Levels of Living, (5) Population and Level of Economic Activity, (6) Population Growth and Economic Development, (7) Population Growth and International Relations, (8) Socio-Cultural Context of Population Dynamics, and (9) Population Policy. For the economist some of the most interesting material is found in Section 5 where the various writers are trying to fit population changes into the Keynesian model for the determination of the level of income and employment. The article by Hansen is an excellent statement of the stagnationist theory that decline in the rate of population growth may lead to difficulty in maintaining full employment, but even in the late thirties when this paper was prepared Hansen made greater allowance for the effect of innovation and technological change than most of his critics have admitted. The article by Barber makes an interesting analysis of the acceleration principle as it applies to changes in the demand

for capital under conditions of changing rates of population growth. In the article by Brockie the attempt is made to demonstrate that alternative investment outlets are available to offset the effects of declining population growth rates. This balancing of alternative points of view has been attempted in the selections of a majority of the readings. As must inevitably be the case in a volume of this type, the attempt to present a balance of viewpoints leads to the inclusion of some articles which are below the standard of the selections as a whole.

Other sections which will be rewarding for the economist are those dealing with the relationship of population changes to international relations, particularly as these factors affect American foreign policy in Europe and the underdeveloped countries. The article by Notestein is particularly good in analyzing probable developments as the backward areas industrialize, while the one by Hofstee provides a stimulating treatment of European problems as they are affected by population pressures. Many other articles are interesting and valuable, although review space is not available for their discussion. A limited number appear to this reviewer to have been included which might well have been omitted, but the advantage of a book of readings is that each article can be read independently and the less interesting ones skipped.

Certain sections of the book, of course, will hold more of interest for the sociologist than for the economist, but most of the members of our craft will benefit from reading section 8 in which the socio-cultural aspects are emphasized. Too many of us still find ourselves treating population problems as a form of economic equilibrium analysis along Malthusian lines.

The wealth of suggestion as to resource material will be extremely valuable for the student of population. The first article, *History of Population Theories*, was prepared by the Population Division of the United Nations and its 204 accompanying footnotes will be most useful in this connection. The other articles are accompanied by the original footnotes to provide further suggestions. At the end of the book is an extensive bibliography organized to correspond to the main subject matter divisions of the book. As might have been expected from these authors, the volume represents a piece of very careful scholarship. Unfortunately, it appears that the publishers intended the book as an undergraduate text, since much of the print is rather small to be read with comfort by the tired eyes of older faculty members.

University of Alabama   R. MURRAY HAVENS

Economic Analysis. By Edmund Whittaker. New York: John Wiley and Sons, 1956. Pp. xiii, 460. $6.50.

This book is a new text for courses in intermediate economic analysis and it presumes that students will have had an introductory course in general economics. It aims to integrate macro- and micro-economics, to consider social objectives of importance in economics, to furnish the student with a knowledge of the working of the economy, and to supply him with tools which he can use to broaden his understanding.

Part I deals with prinicples and procedures. Its five chapters cover about

100 pages and discuss man and the economy, economics as a science, economics as an art, the interpretation of experience (including experimentation, statistical methods, geometrical techniques, and mathematical procedures), and planning.

The ten chapters of Part II cover about 350 pages and present applications of the principles and procedures of Part I to the present-day economy. The broad topics considered include general equilibrium theory, individual choice of the level of work and income, consumption, time preference and investment, production theory, problems of production, price, national income and the volume of employment, the distribution of income, and economic progress.

The chapter on consumption actually deals with utility and demand, indifference curves, demand schedules, multivariable analysis of demand, and the elasticity of demand. Time preference, investment, and the demand for and supply of capital are considered in a chapter located between those on consumption and production. The material on production and costs is very long and detailed. Problems of production include not only size of plant and size of firm but also product choice and industrial location, location in relation to the factor costs of specialization, interproduct mobility within the enterprise, and interlocality movements of production factors.

The chapter on price is organized by time periods, and in each time period price determination under all conditions of the market is discussed. The chapter on the distribution of income takes up the theory of distribution only in general terms and then goes on to discuss the "just price" and modern distribution policy, taxation and public benefits in relation to the distribution of income, inequality and redistribution, and the distributional effects of cyclical and price-level changes. The material on economic progress is concerned largely with various interpretations of economic progress, but there is some analysis of factors related to progress.

Although the book is interesting, the student who reads it will seldom if ever be moved to mirth and he may come to regard economics as a very serious business. The author has tried to keep his mathematical exposition at such a level that it can be comprehended by nonmathematical readers, but many junior and senior students may have trouble with it. The book contains a large number of diagrams, many of them rather complicated and some in three dimensions. In some cases, these diagrams are followed by pages of detailed discussion and analysis, all referring back to the particular diagrams. Such discussions are always somewhat difficult to follow.

The chapters in Part II average 35 pages in length, and some of them run 45 to 50 pages. Some teachers (and students) may not like chapters which have to be assigned over a period of a couple of weeks. There is no doubt that students will have a busy semester or quarter if they have to attempt to cover the whole book, but the author recommends a sampling procedure which may be varied with the interests of instructors and the backgrounds of students.

In general, however, this is a good textbook for courses in intermediate economic analysis and the author has succeeded to a large extent in attaining his

objectives. The style is simple and clear and the book contains a wealth of illustrations and examples. It is difficult to write a book which will be useful both for students who are intending to engage in business and for those who will go on to advanced study in economics. This book probably furnishes as good a compromise as any, but it may prove more useful and attractive to the latter group. The order in which topics are presented in such a book is largely a matter of taste. The author's order clearly contains some unusual features, but many may find it appealing. On the whole, it is to be expected that this book will become a worthy competitor in the field of intermediate economic analysis.

University of Florida RALPH H. BLODGETT

Agriculture in an Industrial Economy: The Agrarian Crisis. By Troy J. Cauley. New York: Bookman Associates, 1956. Pp. x, 191. $4.00.

Professor Cauley classifies himself as an "institutional economist" and devotes much of the first part of the book to asserting his belief that price theory cannot aid economists in understanding problems of agriculture. It is his contention that the significant aspects of our culture are technological and institutional. The major problems concerning the economy originate in these areas and, therefore, must be solved through them. He refuses to recognize that prices and the profit motive operate within an institutional framework.

Cauley's supply analysis is confusing to this reviewer. In particular, it is difficult to understand whether he is thinking of movements along a supply function or movements of the function. He argues that supply is determined by technology and businessmen's expectations (p. 17), but he does not indicate what the expectations consist of. Later, he argues that year in and year out farmers produce as much as they can, irrespective of price (p. 24). This is inconsistent with his contention that when prices of farm products drop, farmers are "apt to respond to low prices by trying to produce more rather than less" (p. 49). He is arguing here that supply of farm labor by owner-operators has a backward slope, and that farmers respond to changes in prices of their products by increasing production when price falls. Logically, there is nothing wrong with this theory. The appropriateness of the theory, however, is highly questionable. If farmers really responded to decreased product prices by increasing production, then the appropriate policy to follow in times of "shortages" of food and fiber would be for the government to place low price ceilings on farm products, thereby encouraging output!

Virtually all economists have argued that the price of elasticity of short-run supply is very low. From a long-run viewpoint, however, the more important question concerns shifts of the supply function itself rather than movement along the function. The price of farm products is not among the factors governing shifts in the agricultural supply function. The supply function is shifted, for example, by opportunity returns in nonagricultural employment for resources.

Cauley's attack on Schultz's proposals of compensatory payments and for-

ward prices demonstrates a lack of understanding of these proposals. Schultz's proposal of compensatory payments was designed to "compensate" farmers for damage incurred during periods of industrial depression. The proposal of forward prices was designed to provide price guides for use of farm resources. Compensatory payments would be in effect only during depressions. During such periods forward prices would consist of a set of frozen price relatives; there would be no attempt to reduce or expand production by varying these prices. Cauley's "proof" that forward pricing "is obviously nonsense" (p. 106) is completely inappropriate. He has failed to recognize that compensatory payments would be operative only during industrial depression and that forward prices would not be used to clear the market during such periods. The price to consumers and to producers would be separated by the amount of the compensatory payment.

The author's major policy variable consists of a redistribution of income. He introduces the concept of a functionally adequate distribution of income which he defines as "a distribution of purchasing power among the people which will create and maintain a pattern of spending for current consumption and investment in capital equipment that will enable us to operate our economy at its full and gradually expanding technological capacity indefinitely" (p. 22). This policy variable is a relatively weak demand shifter for farm products.

Cauley denies that government price supports for farm products tend to hold people in farming. Failure to migrate he attributes to the inferior quality of farm labor and to the general cultural requirements of other occupations. He argues that high price supports may, in fact, promote migration by financing education (p. 87). If the failure to migrate is due to lack of educational training, surely the appropriate public policy to encourage migration would involve improvement in the educational training of farm residents rather than arbitrarily increasing the prices of selected farm products.

Cauley recognizes the need for decreasing the farm population but contends that people should be attracted out of agriculture by better economic opportunities elsewhere rather than by being pushed out by low farm incomes. He strongly contends that the prices of agricultural commodities should not be permitted to fall. Obviously, he overlooks the fact that low farm income is a relative term, and that attracting people out of agriculture by better economic opportunities merely means that incomes must be increased at the margin in nonagricultural sectors compared with incomes in agriculture. He says that to let the price of cotton fall would decrease the purchasing power of cotton producers, and, therefore, to some extent would undermine the whole economy (p. 136). He fails to recognize that changes in costs of production may mean that profits are increased even when prices of farm products decrease. Furthermore, a decline in profits in a particular industry does not mean that the total economy suffers; in fact, it may be evidence of a prosperous developing economy. Following Cauley's proposals to their logical conclusion, the buggy industry would be thriving today in the United States.

North Carolina State College   CHARLES E. BISHOP

The Agricultural Commodity Programs—Two Decades of Experience. By Murray R. Benedict and Oscar C. Stine. New York: Twentieth Century Fund, 1956. Pp. xliii, 510. $5.00.

The Agricultural Commodity Programs is a collection of detailed case histories covering two decades of experience with government efforts to solve the farm problem. It is the last in a series of three related works beginning with Benedict's *Farm Policies of the United States: 1790–1950.* The current study actually represents a continuation of a previous work published in 1955 under the title *Can We Solve the Farm Problem?*

After an "Introduction and Summary" the authors take up in successive chapters programs for 1) cotton, 2) tobacco, 3) wheat, rye and rice, 4) oilseed crops, 5) coarse grains and livestock, 6) butter, cheese, poultry and eggs, 7) sugar, 8) wool, 9) fruits and vegetables, 10) potatoes, and 11) fluid milk.

For each of the commodity programs an attempt it made to answer the questions why? what? when? and how? and to evaluate in objective fashion its net effects. Attention is called to the fact that the programs began during a period of deep depression with a heavy excess of production; very low prices, and acute distress in the farm areas; continued through the war period when prices and production were high and when the principal emphasis was on increased production rather than on curtailment; and finally extended into a postwar period of general prosperity and relatively high farm prices but of declining net farm income and general maladjustments in total agricultural production.

The "devises" employed in meeting these varied situations fall roughly into six categories: "1) Attempts to create an improved system of marketing based on producer-controlled cooperative marketing agencies; 2) holding operations designed to stabilize the flow of nonperishables onto the market; 3) efforts to cut back and hold down farm production with a view to bringing supplies into better adjustment with demand; 4) measures designed to transfer buying power from consumers or the treasury to farm groups; 5) marketing agreements intended to stabilize the industry and strengthen prices; and 6) efforts to hold prices up to the high levels achieved during the war and postwar years by means of government loans and purchases."

Along with these there were various supplementary programs such as export subsidies, food stamp plans, conservation payments, and wartime incentives to increase production.

The conclusion of the matter is that no one type of program can be applied nationally to all commodities or even to any very large group of them. This marked lack of "product differentiation" constitutes in the opinion of the authors one of the principal defects of the system. Even for a single commodity the authors suggest the need for regional and type differentiation. Finally it is observed that most of the programs now in operation do not fit the needs of the day having been designed for situations highly uncharacteristic of the present. To this most economists can add a hearty "Amen."

Clemson College   G. H. AULL

The Colombo Plan and Other Essays. By Frederic Benham. New York and London: Royal Institute of International Affairs, 1956. Pp. viii, 89. **$1.50**.

The five essays in this small book are concerned with some of the problems of economically underdeveloped areas, particularly in Asia. Only one essay, the first, is directly concerned with the Colombo Plan. The others deal with deficit finance, protection, price-stabilization schemes for raw materials, and population. Most of the discussion of all these matters is closely related to policy questions. Benham presents no new theories and no new collections of facts in this book, nor does he pretend to discuss each topic exhaustively. His purpose is rather to summarize the conclusions he has reached through his long study of these problems. In each essay he outlines the principal considerations which lead to his conclusions, but he obviously cannot present in full the body of theory and assumption upon which the arguments must rest.

Benham's position on policy issues is a kind of tempered orthodoxy. He sees little place for tariff barriers and other forms of protection in the economic policy of underdeveloped countries, and he considers a heavy emphasis upon manufacturing to be unwise. While he recognizes the harmful aspects of unstable prices for primary products, he doubts that successful stabilization schemes can be devised—this mainly because of practical difficulties. He states a carefully qualified case for deficit financing, but concludes that the scope for it in Asia is very limited. He accepts the need for aid and government-directed developmental programs, but welcomes a larger role for trade and private investment.

This book will be of interest to the general reader and to the economist who desires a brief, lucid, and informed discussion of some issues in economic development. It is also excellent collateral reading for introductory courses touching the field of economic development.

University of North Carolina   JAMES C. INGRAM

The Sterling Area in the Postwar World: Internal Mechanism and Cohesion, 1946–1952. By Philip W. Bell. London: Oxford University Press, 1956. Pp. xxvi, 478. **$10.10**.

Professor Bell's solid and stolid volume, evidently the embodiment of a prodigious amount of labor, is his doctoral dissertation. In scope, substance, and presentation, it has most of the questionable and unquestionable virtues of such research: it is systematic, comprehensive within specified limits, generously documented, wearisomely detailed, and not very exciting.

In general, and in contrast to the bulk of the literature, the study is devoted to "the *internal* working during the postwar period of the *monetary* union . . . known as the Sterling Area. Only indirect consideration is given to the Area's relations with the outside world, including the Dollar Area" (p. vii). As the sub-title indicates, the analysis usually extends through only 1952, but occasional data and references pertain to 1953–1955.

The book is organized into three parts. A relatively brief opening section, "The Sterling Area System," describes the system—centering around the sterling exchange standard, characterized by "maintenance of foreign exchange reserves

in London and a fixed parity between domestic currency and the pound sterling by some central monetary authority in each member region" (p. 4)—and contrasts the postwar arrangement with the organization of the 1930's. It is argued that "the entire nature and substance" (p. 17) of the system has been altered by controls held over from World War II, concerning both intra-Area operation and, even more significant, relations of members with other currency areas. The viability of, and alternatives to, the present system are thus real questions.

Part II, "Operation of the System in the Post-War Period: Disturbances and Adjustment," and Part III, "The System in Transition," could, with probably minor modifications, constitute separate studies. The final chapter is a good summary and evaluation, helping to pull together the diverse earlier analyses.

The discussion of the postwar operations of the sterling exchange standard, with reference to both the United Kingdom and overseas members, is perhaps the major contribution to filling gaps in the literature. While conscientiously detailing—country by country—institutional, administrative, and statistical minutiae, the analyses of varied balance of payments adjustments follow reasonably well a theoretical outline posed in chapter 4. This chapter attempts to elaborate the "modern" income approach to trade adjustment with considerations of (a) impacts on public and banking liquidity positions and thence on the money supply and (b) relative price changes and thence substitutions among domestic, import, and exportable commodities. The attempt is to be applauded, and it includes interesting suggestions and taxonomic summaries. Unfortunately, here as elsewhere, the exposition could be more helpful at critical points. A brief mathematical appendix at the end of the book is more interesting in conception than in execution, primarily because of rather severe simplifying assumptions.

It might be noted that Bell consistently succeeds, where recently some eminent economists have evidently been confused, in keeping straight the possible relationships running from changes in imports, the expenditure on which may or may not be a disposition of current income, to resulting changes induced in income. Other things the same, imports financed by explicit borrowing (i.e., selling I.O.U.'s in an autonomous transaction) or received as a gift, while increasing goods available for "absorption," will not affect national income (i.e., the value of national production). Increasing imports through expenditure of income or other means will affect income only if some component of spending on current output is altered.

The third section, an investigation of the ties binding together the Sterling Area, may well be the most interesting to a majority of readers. The ties of intra-Area trade, financial mechanism, and capital flows are considered. It is held doubtful that these unifying elements are as strong now as in the 1930's; "Sterling Area ties with Great Britain have declined in importance for the Overseas Sterling Area, for some OSA members much more so than for others, whereas in general, union with the Overseas Sterling Area has become even more important than before the war for Great Britain" (p. 400); alternative arrangements are becoming increasingly attractive to most members. "Analysis of the

cohesion of the Sterling Area . . . leads to the conclusion that continuation of the
existing system as it now operates over any extended period in the future if not
impossible is at least unlikely" (pp. 419–20).

As Bell's lengthy bibliography (pp. 435–64) indicates, there is available a
considerable mass of pre- and postwar publications on the Sterling Area. This
includes brief, recent surveys by A. C. L. Day and by Judd Polk. For probably
all but the highly specialized worker, books like those of Day and Polk will be
more useful—certainly more attractive—than Bell's rather ponderous tome.
The publisher asserts on the jacket that Bell has written a book "which no
serious student of international finance will wish to neglect." This is true—for
students who are *very* serious.

    University of California at Los Angeles   WILLIAM R. ALLEN

Planning for an Expanding Economy. By C. N. Vakil and P. R. Brahmanand.
    Bombay: Vora & Co., 1956. Pp. xxx, 399. $4.50. (Obtainable from Institute
    of Pacific Relations, 333 Sixth Avenue, New York 14, N. Y.)

This is a provocative, erudite, highly critical study of India's 2nd Five Year
Plan. The publication of such a book criticising many currently accepted plan-
ning procedures, assumptions, and goals indicates that freedom of thought, dis-
cussion and expression exist in the India of today.

Professors Vakil and Brahmanand clearly demonstrate the complexity of
planning for economic development in an underdeveloped country. In Part I
they devote 33 pages to a description of the Indian economy in operation during
the 1st Five Year Plan, 1951–56; then 130 pages of detailed criticism of the
Draft Outline of the 2nd Five Year Plan follows. Part II comprised of seven
chapters (207 pages) presents the authors' Alternate Plan. Needless to say, this
section of the book is entirely in favor of something other than Plan II.

Among many criticisms of the II Draft Plan the following are included: (a)
That there is inadequate planning for the production of wage-goods production;
(b) There is too much emphasis on cottage-goods production. This the authors
insist is a temporary phenomenon at best and represents a missuse of scarce re-
sources; (c) Plan II fails to come to grips realistically with the growing problem
of unemployment, and that the extent of unemployment is likely to increase if
Plan II is carried through as contemplated in the Draft; (d) That the Plan fails
to make provision for shifting the "hidden unemployed" from agriculture to
employments which would add to capital formation. (e) Unrealistic assumptions
concerning the extent of voluntary or automatic increases in production and
investment in an underdeveloped economy such as India's are made by the
Planning Commission. (f) Plan II relies too heavily on models of planning
borrowed from advanced economies but which are not applicable to Indian
conditions at present.

(g) According to the authors, Plan II assumes that increases in productive
efficiency will occur equal to or better than such gains made during Plan I. They
point out that this assumption is probably incorrect for technical reasons that

they emphasize. (h) With references to gains that were made by the Indian economy 1951–56, the Planning Commission interprets such gains too optimistically as to percentage increase and also as to causes of such gains. Many of the gains in agricultural production were the result of fortuitous monsoon and weather conditions in no way caused by the planning procedures. (i) That if Plan II is carried out literally, serious imbalances in the economy will result which will deter if not prevent the achievement of a balanced economy in the future. (j) The authors object to the assumptions concerning investment in heavy industry implied in Plan II. They point out the time lag between construction of heavy industrial facilities and their efficient utilization. (k) A basic criticism of almost all facets of Plan II is the absence of the use of the government's coercive power to assure the utilization of excess production for capital formation rather than increased present consumption.

In order that economic progress may proceed at a cumulative rate, Vakil and Brahmanand insist that planning must be based on conditions as they exist in underdeveloped India. They suggest an Alternate Plan. What is needed is to develop policies that will assure a rate of investment equal to or greater than the rate of population growth. A strong government policy aimed at limiting population is urged. Expansion of production of both consumer goods and capital goods is possible. Strict limitation of increases in consumption standards is advocated. It is suggested that if fully employed workers are paid one rupee per day, the disguised unemployed are to be paid four annas per day and that government shall strictly enforce such wage rates. Finally, it is suggested that mass migration of India's surplus population be planned with the cooperation of advanced economies experiencing a labor shortage.

This book was written under pressure of time limitations. Insufficient time made impossible the avoidance of much repititious material, accurate proofreading, and the elimination of very long sentences (one sentence on page 297 runs on for more than 150 words). If the book sought to influence the Planning Commission it was too long, involved and theoretical. For the general public the reader would need to have a considerable background of economic literature from the Classical School through to the present. Approximately one-fifth of the book is devoted to theoretical discussion, comment and analysis of many assumed conditions, and differences between under-developed and developed economies. The assumption that disguised unemployment does not exist in a developed economy would be defensible only in terms of a specific definition which the authors do not supply.

In spite of such shortcomings, this book may be read with profit (and occasional irritation) by professional economists who are interested in evolving patterns for economic improvement in underdeveloped areas. This reviewer agrees with the central thesis of the authors, that any program for economic development must be built upon the existing realities of an area and must become operative within or upon the culture of the people residing in an underdeveloped country.

University of Alabama   PAUL W. PAUSTIAN

The Economics of Soviet Steel. By M. Gardner Clark. Cambridge, Mass.: Harvard University Press, 1956. XIV, 400. $7.50.

In spite of the many recent works on the U.S.S.R. our understanding of the Soviet economic system is sufficient only for the broadest of generalizations concerning price determination, income levels, investment and growth. A full appreciation by economists of current developments, therefore, is hardly possible. Professor Clark, of Cornell University, in this study breaks through the barriers imposed by language and by the diffusion of unexplained fragments of information, to provide us a careful review of the development of the Soviet steel industry. By doing so, he has set an example for further research. Although useful in itself, the full value of the book can be realized only when similar studies of other major industrial sectors are available.

In the first of four parts, Clark sets forth the aggregate production series for pig iron, ingot steel and rolled metal from 1913 to 1954 and gives the planned amounts for 1955 and 1960. The actual figures for 1955 and 1956 are now available for pig iron and ingot steel and planned steel output has been raised to 68.3 millions of metric tons for 1960, but in all likelihood it will be revised downward to about the 60 million tons given by Clark (Harry Schwartz in *New York Times,* February 17, 1957).

Investment activities in steel and some notes on cost and price relationships are also included in this first part. Although one might question the author's explanation for the adoption of subsidies during the New Economic Program of the 1920's, it is clear that subsidies have been used as devices to further industrial growth from the beginning of the five-year plans. Preliminary to his treatment of steel prices the author remarks, and with good reason, that in spite of much concern, "... about how the Soviet price system *ought* to operate, (and) less is actually known about how it *does* operate than is true of any other aspect of Socialist economics" (p. 33). Yet, the discussion which follows on costs and prices is weak, for example, it is not true that investment subsidies affect costs equally in all industries (p. 41).

In part II, Clark investigates specialization in products and scale of firm operations. The Soviet planners, although admitting to a relative scarcity of capital in comparison with the U. S., decided at first to follow the American example of building large-scale production and capacity units. But by the beginning of the Third Five-Year Plan, they had recognized the need for more product classes and the efficiency of the smaller size mill implied. Since then they have abandoned the policy of "gigantomania."

Part III is the first portion in which a hypothesis is tested analytically, specifically that the factors affecting plant location can be ranked as to their importance both in terms of cost and in terms of actual policy. This analysis emphasizes the importance of conveniently located sources of raw material for low-cost steel production. Capital can be readily substituted for better grade ores and coking coal both of which in the author's view are being depleted at rather rapid rates (chapter 16). But these higher capital output ratios will tend to retard future growth, a factor too often ignored in projections of Soviet economic development.

The focus of Part IV is on productivity achievements and shows the facility of Soviet technicians to adopt such western innovations as the high top-pressure blast-furnace operation developed jointly by Republic Steel Corporation and Arthur D. Little, Inc. There are, in addition, a number of useful appendices, particularly the first on the administrative organization of the industry.

Other readers, as I, may be moved by the notes of Part I on investment in steel fabricating facilities and the distribution of product among uses to speculate about Soviet anticipation of World War II. Three quotations suggest the conclusion that Soviet authorities anticipated World War II by the mid-1930's, but either they expected an earlier outbreak or they underestimated the requirements of steel: First, "The big spurt in the *construction* of munitions factories appeared in 1936, exceeding 1935 almost threefold. The big spurt in the *manufacture* of munitions came, as one might expect, the following year" (p. 25). Second, "The *relative share* of the iron and steel industry in total investment declined drastically after 1934, and the industry's share of structural steel fell steadily from 1932 through 1938" (p. 56). And third, the well-documented statement that, "The short-run necessity to turn out munitions as quickly as possible apparently outweighed the strategic advantage of building the plants in underdeveloped and distant regions out of reach of potential enemies" (p. 234). However qualified the conclusion, it is considerably stronger than a similar one based on investment series formerly available.

This book, rich in fact and seldom weak in theory, should certainly be included on the reference shelves of students of Soviet affairs, resource specialists, and investigators of economic growth and development.

North Carolina State College CLIFFORD D. CLARK

Discharging Business Tax Liabilities. By Horace J. DePodwin. New Brunswick, N. J.: Rutgers University Press, 1956. Pp. xii, 167. $4.00.

This small volume is concerned not with the more traditional aspects of the effects of taxation on business but rather with the effects of the timing of Federal tax payments. Tax payments made by businesses include, *inter alia*, excises, corporate income taxes, personal income taxes withheld by businesses, and social security levies. Such payments in 1953 were 82.1 per cent of total Federal *internal* revenues. That the collection and payment of this large amount of tax money has substantial effects on the working capital requirements and current positions of businesses is obvious. Dr. DePodwin has attempted to spell out just what some of these effects are and have been.

For purposes of review, the book may be divided into three sections. The first four chapters provide an introduction and a discussion of certain general matters. The importance of taxes paid by businesses is established—most businessmen would, I expect, take this for granted—; the significance of the time of the tax payment relative to the time of the inflow of funds out of which the tax is to be paid is spelled out; and a brief treatment of accounting for tax liabilities is given. The second part of the book deals with the "prepayment excises." These are of special financial significance to the producers of some products, particularly tobacco and liquor, but the amount of space devoted to this topic seems

a bit out of proportion to its importance to corporations generally as compared with the schedule of corporate income tax payments.

It is this latter topic that is covered in the third part of the book. After discussing the more obvious results of the corporate income tax being generally collected in periods prior to its payment and the assumed advantage to the corporation of this delay, the author reports in detail on a study he has made of the extent to which corporations actually use in operations the funds arising from the tax accruals or simply carry these amounts as cash and/or short term government securities. While the general conclusion obscures important differences in individual corporations and in corporations of various size classes, the study reveals that manufacturing corporations with net incomes had fully funded their tax liabilities with cash and/or governments in seven out of the ten years, 1940–49, and that in only one year, 1941, was any appreciable amount unfunded. While the author cautions against sweeping generalizations based on this study, it does form the basic part of this section of his book. The salient conclusion is that manufacturing corporations as a whole stand ready to pay the tax without much strain on their cash positions. The author mentions the fact that this greater liquidity strengthens the firm; he does not give adequate attention to the costs to the corporation of maintaining such a highly liquid position. And if the corporation experiences no difficulty in handing over the tax payment to the government, there should be little reason for the opposition of business to the acceleration in recent years of corporate income tax payments.

Dr. DePodwin has written an informative book. He has handled his materials quite satisfactorily. His most original contribution is his analysis of the extent to which businesses have funded income tax accruals. He has focused attention on a facet of taxation that is of particular importance to students of corporate finance. While the book has some faults, it is deserving of much better treatment than it received from its publisher. It is really too bad that one of the victims of increased printing costs is pleasing formats for scholarly works of limited sales appeal.

University of Florida   JOHN B. McFERRIN

Trends in Employment in the Service Industries. By George J. Stigler. Princeton, N. J.: Princeton University Press, 1956. Pp. xviii, 167. $3.75.

Expectations are not disappointed. Professor Stigler has the rare gift of combining careful scholarship with lucid presentation and a sense of humor. He shows great skill in leading the reader on through a vast and intractable mass of factual material, in drawing conclusions where they seem to be warranted, and in raising questions which should stimulate further research. On this last point he reviews his own study when he remarks, "Research is an unusual form of purposeful activity: it sets out to answer questions but ends by multiplying questions. Responsible predictions of trends in this large area will not be possible until we have pushed much further in the study of individual industries."

The study, number 59 in the General Series of the National Bureau of Economic Research, deals with that heterogeneous sector of the economy which

produces personal services rather than material commodities. It is closely related to other studies in the series, particularly to Fabricant's *The Trend of Government Activity in the United States since 1900* and to Barger's *Distribution's Place in the American Economy since 1869*. There are obvious difficulties in marking out the precise boundaries of the service industries and classifying them. Stigler begins by approaching his problem indirectly by way of a comparison of budgets, first of English Working-Class Families in 1794 and 1937–38 and then of Massachusetts Families in 1874–75, 1903, and 1935–36. The shifts in the proportion of expenditures on food and other basic necessities to miscellaneous items show "an immense transformation of the workingman's way of life." This development has been accompanied by substantially unbroken growth in the service industries and growth in their proportion of total employment. Though Stigler later points out the limitations in the use of budget data, especially for predicting trends, the coincidence of these developments suggests some working hypotheses.

Among the broad categories included in the service industries for the purposes of this enquiry are trade, finance, insurance and real estate, government, the professions. Transportation and public utilities providing non-material goods are omitted because they are the subject of earlier National Bureau Studies. Economic developments which have influenced all the service industries are summarized in the "historical preface" of Chapter 2 which may be supplemented by the final chapter in the volume. Actually this reviewer would suggest that the reader may find using the finale as an interlude at this point is a real aid to clarification of the whole work.

In so far as it is possible to generalize, the picture of the service industries is "one of small business units, organized as single proprietorships or partnerships, employing . . . a small number of workers in each establishment." But the exceptions are so important and the variety of characteristics so great that the author is impelled to single out for special treatment retail trade, routine personal services, the professional service industries and those service industries which cater to business rather than to the ultimate consumer.

While the same general influences have been in operation on trends in the service industries their results have not always been similar. For example, "the movement of work has been from households to the market in the cases of beauty parlors, laundries and cleaning establishments; on balance it has been from the market to households in the cases of domestic service, . . . and barber shops." Some of the major factors which have influenced the trend of employment are technology, specialization, income, population characteristics and the supply of labor, and all of these categories are to some degree interdependent. In general this country's experience supports Colin Clark's thesis that the tertiary industries take an increasing share of the labor supply as the economy progresses. Yet forces directly related to employment are not always highly correlated with rising real income. Distribution of income seems to be a more important factor and we may expect significant national differences in the roles and growth of service industries.

Sweet Briar College   GLADYS BOONE

NOTES

The twenty-seventh annual conference of the Southern Economic Association will be held on November 8 and 9, 1957, at the Hotel Peabody, Memphis, Tennessee.

President Milton S. Heath has appointed the Nominating Committee for the 1958 officers of the Southern Economic Association. It consists of John B. McFerrin, University of Florida, Chairman; James M. Buchanan, University of Virginia; and Carey C. Thompson, University of Texas.

WALTER S. BUCKINGHAM, JR.
Secretary

APPOINTMENTS AND RESIGNATIONS

Brother J. Alfred is instructor in economics at Christian Brothers College.

Howard K. Ammerman has resigned as assistant professor of business statistics at the University of Oklahoma.

Karl E. Ashburn, dean of the Division of Commerce at McNeese State College, has been appointed a member of the Port Development Committee of Lake Charles, La.

J. R. Bangs, until recently director of Industrial and Personnel Relations at the Budd Company, Philadelphia, Pennsylvania, and formerly professor of administrative engineering at Cornell University, has been appointed visiting professor of management at the University of Florida, effective September, 1957.

Herbert von Beckerath, formerly of the department of economics at Duke University, has been appointed special lecturer in economics at North Carolina State College for 1957-1958. For the past two years he has been at the University of Bonn in Germany.

L. J. Benninger, who has been serving as visiting professor of accounting, 1956-1957, has been appointed associate professor of accounting, University of Florida, effective September, 1957.

L. D. Bishop has been promoted to associate professor of business management at the University of Oklahoma.

M. M. Blair has retired as head of the Management Department at the University of Tulsa. He is continuing to teach.

Harry Bonham, head of the Department of Marketing at the University of Alabama, has been appointed acting dean of administration at the University of Alabama.

Paul A. Brinker, associate professor of economics, has been appointed chairman of the Department of Economics at the University of Oklahoma.

Homer A. Brown, Jr., formerly an auditor with Arthur Anderson & Co., Houston, Texas, has been appointed assistant professor of accounting at the University of Oklahoma.

Russel Brown, on leave from Lenoir Rhyne College, served as visiting as-

sistant professor of economics at Davidson College during the second semester, 1956–57.

William M. Brown, of the University of Pittsburgh, has been appointed assistant professor of marketing in the College of Business Administration, University of Texas.

Gilbert R. Bythewood has accepted a position as assistant professor of economics at the University of Houston, beginning in September, 1957.

Richard G. Carter has been appointed instructor in business administration at Mississippi State College.

Buford A. Casey, of Ohio State University, has been appointed assistant professor of marketing in the College of Business Administration, University of Texas.

W. Fred Chapman has been appointed assistant agricultural economist at Clemson College.

Dudley J. Cowden, professor of economic statistics at the University of North Carolina, has received a Kenan leave of absence for the spring semester, 1957–1958, for research, study, and lecturing at the University of London.

Dennis M. Crites has been promoted to associate professor and chairman of the Department of Marketing at the University of Oklahoma.

James E. Davis has been promoted to associate professor of business education at the University of Miami.

Richard Deutsch is teaching economics at Christian Brothers College.

Phoebus J. Dhrymes, of the University of Texas, has been awarded a fellowship by the Southern Fellowships Fund for work on a doctoral program in economics.

Charles G. Drake, formerly instructor in economics and business at the University of Missouri, has been appointed assistant professor of business management at the University of Oklahoma.

Brother H. Edmund is instructor in economics at Christian Brothers College.

William H. Faver has been appointed assistant agricultural economist at Clemson College.

Charles E. Ferguson has been appointed assistant professor of economics. at Duke University beginning the fall semester, 1957.

Howard Folts was on leave from the University of Alabama during the spring semester to work with the Civil Defense Administration.

Claude S. George, Jr., associate professor of industrial management at the University of North Carolina, is serving as director of a research project on the relationships of business and education under a one-year grant from the Committee for Economic Development to the School of Business Administration.

Donald Glossner is instructor of accounting at Carson-Newman College.

Robert S. Glover has been appointed assistant in agricultural economics on a temporary basis in the Department of Agricultural Economics at Alabama Polytechnic Institute.

Melvin L. Greenhut, who has been chairman of the Division of Social Re-

lations and Business at Rollins College, has been appointed professor of economics at Florida State University.

C. Thomas Haworth, formerly an assistant in the Department of Economics at Ohio State University, has been appointed assistant professor of business management at the University of Oklahoma.

Phillip Howell has been promoted to professor of economics, University of Tulsa.

Tom Humble has returned to the University of Alabama from a one-semester leave to resume his duties as associate professor of accounting.

William L. Ivey, instructor in economics at the University of North Corolina, has been appointed manager of the private patient service at North Carolina Memorial Hospital.

Frank H. Jackson, formerly associate professor of economics at Drury College, has been appointed assistant professor of economics at Florida State University.

Mrs. Dell B. Johannesen served as lecturer in economics at the University of North Carolina during the spring semester.

William H. Keown has been promoted to professor of business management at the University of Oklahoma.

John J. Klein has been appointed assistant professor of economics in the School of Business at Oklahoma A. and M. College.

Preston P. LeBreton, formerly with the University of Detroit, has been appointed associate professor and head of the Department of Marketing and Management of Louisiana State University, beginning in September, 1957.

Dudley G. Luckett, of the University of Texas, has been awarded a fellowship for the academic year 1957–58 by the Ford Foundation for the purpose of completing his doctoral dissertation in economics.

Edward O. Malott, Jr., formerly head of the General Management Division of the American Management Association, has been added to the faculty of the University of Virginia Graduate School of Business Administration as a lecturer in business administration.

Robert D. Mannix, a member of the economics department of the Carter Oil Co. in Tulsa, is serving as instructor in business administration at Benedictine Heights College, Tulsa, Oklahoma.

Willis W. Marshall, Jr., has been appointed assistant in agricultural economics on a temporary basis in the Department of Agricultural Economics at Alabama Polytechnic Institute.

Stephen L. McDonald, formerly with the Research Department of Humble Oil and Refining Company, has been appointed associate professor and head of the Department of Finance at Louisiana State University, beginning in September, 1957.

B. C. McGough has been appointed instructor of real estate at the University of Florida, effective June, 1957.

Leon C. Megginson, of Louisiana State University, served as chairman of a

Special Committee at his University to prepare a report for the Louisiana Legislature in May, 1957, recommending the organizational structure, building needs, and operational budget for a new Commuter Branch of L.S.U. proposed for New Orleans.

Marshall Milligan, a Stanolind Oil and Gas Company economist for the past four years, has joined the College of Business Administration faculty at the University of Tulsa. His specialized field is petroleum economics.

Harold W. Moorhouse, of Washington, D.C., is visiting professor of finance at the University of Mississippi.

Louis O'Quinn left McNeese State College in June to become professor of economics and director of the Bureau of Business Research at Mississippi State College.

Armand Perrault, assistant professor of business administration at McNeese State College, has been granted a sabbatical leave for summer of 1957 to work for the Ph.D. degree at University of Texas.

Louis S. Philhower, Jr., formerly assistant agricultural economist at Clemson College, has accepted a position with the Polio Foundation and is stationed in Raleigh, N. C.

Marion Phillips, who is working towards the Ph.D. in economics at the University of Oklahoma, has been appointed instructor in marketing at the University of Oklahoma.

Murray E. Polakoff, assistant professor of economics at the University of Texas, has been awarded a Social Science Research Council grant in order that he may participate in the 1957 Summer Research Training Institute for Research in Credit and Monetary Policy, sponsored by the Council and conducted by the Board of Governors of the Federal Reserve System.

Harry R. Price has been promoted to professor of accounting at the University of Miami.

Wilson B. Prickett has been appointed assistant professor of business finance and assistant dean of the College of Business Administration at the University of Oklahoma.

James W. Reddoch, of Louisiana State University, attended the Summer Case Seminar Program at Harvard University in June–July, 1957.

Lorenzo Reeves has been appointed assistant professor of marketing at the University of Alabama.

Wylma Reynolds, associate professor of secretarial science at McNeese State College, has been appointed a member of the Executive Committee of the Louisiana Business Education Teachers Association.

David F. Ross, formerly director of General Economics for the Development Administration, Commonwealth of Puerto Rico, has been appointed associate professor of economics at Florida State University.

Wendell D. Schoch has been promoted to professor of business education at the University of Miami.

Alfred L. Seelye, professor of marketing in the College of Business Ad-

ministration, University of Texas, has accepted an appointment for the academic year 1957–58 as visiting professor in the Graduate School of Business Administration, Stanford University.

Richard M. Snyder, visiting professor of economics at the University of Miami, has been made professor of economics.

W. Allen Spivey, of the University of North Carolina, has accepted an appointment as assistant professor of statistics in the School of Business Administration of the University of Michigan. He will enter upon his duties in September. During the summer (June–August) he will participate in an institute of mathematics for social science research at Stanford University.

Andrew J. Springfield, who was on leave of absence for the summer of 1956 and the first semester 1956–57 to continue his graduate work at New York University, has returned to the University of Tulsa and is the assistant director of the Downtown Division.

Harry Stark has been promoted to associate professor of economics at the University of Miami.

William S. Stewart served as lecturer in business law at the University of North Carolina during the spring semester.

Eugene L. Swearingen has been promoted to professor of economics and dean of the School of Business at Oklahoma A. and M. College.

Bruno Tervino is instructor in economics at Christian Brothers College.

Lee O. Thayer, who held a graduate teaching fellowship at the University of Wichita, has been appointed instructor in business of communication at the University of Oklahoma.

Raymond D. Thomas, professor of economics, retired June 30, 1957, as dean of the School of Business at Oklahoma A. and M. College.

Henry Thomassen, assistant professor of economics, finance, and statistics at Georgia State School of Business Administration, has resigned to accept a position as economist with Prudential Life Insurance Company.

Courtland S. Thompson has been promoted to assistant professor of management at the University of Miami.

Rollie Tillman, Jr., has been appointed acting assistant professor of marketing at the University of North Carolina for the year 1957–1958.

Lyle Trueblood has been appointed acting head of the Management Department effective in September, 1957, University of Tulsa.

M. A. Unger, formerly of the University of Massachusetts, has been appointed associate professor of business law, University of Florida, effective September, 1957.

James C. Vadakin has been promoted to professor of economics at the University of Miami.

J. Curt Victorius, of Guilford College, has been promoted to professor of economics and business administration. He is head of the Department of Economics and Business Administration.

Joseph A. Von Arx has been promoted to associate professor of business law at the University of Miami.

Harry H. Wade, visiting professor of accounting at the University of Miami, has been made professor of accounting.

J. Harry Wood, visiting professor in finance at the University of Miami, has been made professor of finance.

NEW MEMBERS

The following names have been added to the membership of the Southern Economic Association:

William J. Abbott, Jr., Federal Reserve Bank of St. Louis, St. Louis, Mo.
John A. Aman, Newberry College, Newberry, S. C.
William B. Back, Oklahoma A. and M. College, Stillwater, Okla.
Leo C. Brown, S. J., Institute of Social Order, St. Louis, Mo.
Frank J. Charvat, Emory University, Ga.
E. D. Chastain, Jr., Alabama Polytechnic Institute, Auburn, Ala.
M. A. Eakins, Georgia State College for Women, Milledgeville, Ga.
Robert W. French, Board of Port Commissioners, New Orleans, La.
Edward C. Furlong, Stetson University, DeLand, Fla.
R. R. Hardin, Howard College, Birmingham, Ala.
Frederick C. Lane, Johns Hopkins University, Baltimore, Md.
Richard M. Mosrie, Jr., 2219 Bolton Drive, N. W., Atlanta, Ga.
Frank C. Odell, Jr., Pilot Markets, Inc., New York, N. Y.
William N. Parker, University of North Carolina, Chapel Hill, N. C.
William S. Patrick, 723 Virginia Place, Hopeville, Ga.
John E. Pearson, East Texas State College, Commerce, Tex.
Donald Arthur Schuhmann, Box 9387 Central Park Station, Houston, Tex.
M. E. Stevens, Georgia Institute of Technology, Atlanta, Ga.
Lyell J. Thomas, Wake Forest College, Winston-Salem, N. C.
Samuel E. Trotter, University of Arkansas, Fayetteville, Ark.
Edward F. Ward, Georgia Institute of Technology, Atlanta, Ga.
Rudolf L. Yobs, Georgia Institute of Technology, Atlanta, Ga.

BOOKS RECEIVED

Akerman, Johan. *Structures Et Cycles Économiques*. Vol. I. Paris: Presses Universitaires De France, 1955. Pp. 234. Paper, 1.200 fr.

Akerman, Johan. *Structures Et Cycles Économiques*. Vol. I, Part II. Paris: Presses Universitaires De France, 1957. Pp. 425. Paper, 960 fr.

Akerman, Johan. *Structures Et Cycles Économiques*. Vol. II, Part II. Paris: Presses Universitaires De France, 1957. Pp. 621. Paper, 960 fr.

Aubrey, Henry G. *United States Imports and World Trade*. New York: Oxford University Press, 1957. Pp. x, 169. $3.40.

Baran, Paul A. *The Political Economy of Growth*. New York: Monthly Review Press, 1957. Pp. x, 308. $5.00.

Beckman, Theodore N. and others. *Principles of Marketing*. 6th ed. New York: Ronald Press Company, 1957. Pp. xii, 798. $7.00.

Board of Governors of the Federal Reserve System. *Consumer Instalment Credit: Growth and Import*. Part I, Vol. I. Washington, D. C.: U. S. Government Printing Office, 1957. Pp. ix, 388. Paper, $1.25.

Board of Governors of the Federal Reserve System. *Consumer Instalment Credit: Growth and Import*. Part I, Vol. II. Washington, D. C.: U. S. Government Printing Office, 1957. Pp. 287. Paper, $1.00.

Board of Governors of the Federal Reserve System. *Consumer Instalment Credit: Conference on Regulation*. Part II, Vol. I. Washington, D. C.: U. S. Government Printing Office, 1957. Pp. xxvi, 553. Paper, $1.75.

Board of Governors of the Federal Reserve System. *Consumer Instalment Credit: Conference on Regulation*. Part II, Vol. II. Washington, D. C.: U. S. Government Printing Office, 1957. Pp. x, 161. Paper, 60¢.

Board of Governors of the Federal Reserve System. *Consumer Instalment Credit: Views on Regulation*. Part III. Washington, D. C.: U. S. Government Printing Office, 1957. Pp. vii, 230. Paper, $1.00.

Bowers, Edison L. and others. *Financing Unemployment Compensation: Ohio's Experience*. Columbus, Ohio: Bureau of Business Research, College of Commerce and Administration, Ohio State University, 1956. Pp. xix, 314. $4.00.

Bowman, Edward H. and Fetter, Robert B. *Analysis for Production Management*. Homewood, Ill.: Richard D. Irwin, 1957. Pp. xiii, 503. $6.50.

Chamberlin, Edward Hastings. *The Theory of Monopolistic Competition: A Re-orientation of the Theory of Value*. 7th ed. Cambridge, Mass.: Harvard University Press, 1956. Pp. xiv, 350. $5.00.

Churchman, C. West and others. *Introduction to Operations Research*. New York: John Wiley & Sons, 1957. Pp. x, 645. $12.00.

Clark, John Maurice. *Economic Institutions and Human Welfare*. New York: Alfred A. Knopf, 1957. Pp. xii, 285. $5.50.

Conference on Research in Income and Wealth. *Problems in the International Comparison of Economic Accounts*. Princeton, N. J.: Princeton University Press, 1957. Pp. x, 404. $8.00.

Conference on Research in Income and Wealth. *Regional Income: Studies in*

Income and Wealth, Volume Twenty-one. Princeton, N. J.: Princeton University Press, 1957. Pp. x, 408. $8.00.

Cowden, Dudley J. *Statistical Methods in Quality Control.* Englewood Cliffs, N. J.: Prentice-Hall, 1957. Pp. xxiv, 727. $12.00.

Craf, John R. *Introduction to Business.* New York: Henry Holt and Company, 1957. Pp. 582. $5.75.

Craven, Avery. *The Coming of the Civil War.* Chicago, Ill.: University of Chicago Press, 1957. Pp. xi, 491. $5.00.

Crump, Norman. *The A B C of the Foreign Exchanges.* New York: St. Martin's Press, 1956. Pp. viii, 374. Paper, $3.50.

Davis, Keith. *Human Relations in Business.* New York: McGraw-Hill Book Company, 1957. Pp. xiv, 557. $6.50.

Davis, Kenneth R. *Furniture Marketing: Product, Price and Promotional Policies of Manufacturers.* Chapel Hill, N. C.: University of North Carolina Press, 1957. Pp. xvi, 224. $5.00.

De Grazia, Alfred. *The American Way of Government: National, State and Local Edition.* New York: John Wiley & Sons, 1957. Pp. xvii, 971. $6.95.

Donaldson, Elvin F. *Corporate Finance.* New York: Ronald Press Company, 1957. Pp. x, 876. $7.50.

Einzig, Paul. *The Economic Consequences of Automation.* New York: W. W. Norton & Co., 1957. Pp. 255. $3.95.

Erickson, Charlotte. *American Industry and the European Immigrant, 1860–1885.* Cambridge, Mass.: Harvard University Press, 1957. Pp. x, 269. $4.75.

Falk, Minna R. *The History of Germany: From the Reformation to the Present Day.* New York: Philosophical Library, 1957. Pp. x, 438. $6.00.

Fox, William M. (ed.) *Readings in Personnel Management: from Fortune.* New York: Henry Holt and Company, 1957. Pp. viii, 117. Paper, $1.50.

Frankel, Marvin. *British and American Manufacturing Productivity: A Comparison and Interpretation.* Urbana, Ill.: Bureau of Economic and Business Research, University of Illinois, 1957. Pp. 130. Paper, $1.50.

Fr.-Chirovsky, Nicholas L. *The Economic Factors in the Growth of Russia: An Economic-Historical Analysis.* New York: Philosophical Library, 1957. Pp. xv, 178. $3.75.

Glick, Paul C. *American Families: A Demographic Analysis of Census Data on American Families at Mid-Century.* New York: John Wiley & Sons, 1957. Pp. xiv, 240. $6.00.

Goldberg, Harvey (ed.). *American Radicals: Some Problems and Personalities.* New York: Monthly Review Press, 1957. Pp. x, 308. $5.00.

Griffin, John I. *Industrial Location in the New York Area.* New York: City College Press, 1956. Pp. xiii, 212.

Hampton, Richard J. *Merchandise Control in the Retail Pharmacy.* Pullman, Wash.: State College of Washington, School of Economics and Business, Bureau of Economic and Business Research, 1957. Pp. 96. Paper, $1.50.

Harper, F. A. *Why Wages Rise.* Irvington-on-Hudson, N. Y.: Foundation for Economic Education, 1957. Pp. 124. Paper, $1.50.

Hartmann, Georges. *Le patronat les salariés l'Etat face à L'Automation*. Boudry (Neuchatel), France: Editions de la Baconniere, 1956. Pp. 243.

Holmes, G. A. *The Estates of the Higher Nobility in Fourteenth-Century England*. New York: Cambridge University Press, 1957. Pp. xiv, 180. $4.00.

Horton, Donald C. *Patterns of Farm Financial Structure: A Cross-Section View of Economic and Physical Determinants*. Princeton, N. J.: Princeton University Press, 1957. Pp. xx, 185. $4.50.

Husband, William H. and Dockeray, James C. *Modern Corporation Finance*. Homewood, Ill.: Richard D. Irwin, 1957. Pp. xiv, 771. $6.50.

Kaldor, Nicholas. *An Expenditure Tax*. New York: Macmillan Company, 1956. Pp. 249. $3.25.

Kirby, E. Stuart (ed.). *Contemporary China*. New York: Oxford University Press, 1956. Pp. xi, 264. $4.80.

Lee, Douglas H. K. *Climate and Economic Development in the Tropics*. New York: Harper & Brothers, 1957. Pp. xviii, 182. $3.50.

Leffler, George L. *The Stock Market*. New York: Ronald Press Company, 1957. Pp. xii, 625. $7.00.

Maisel, Sherman J. *Fluctuations, Growth, and Forecasting: The Principles of Dynamic Business Economics*. New York: John Wiley & Sons, 1957. Pp. xv, 552. $7.50.

Mason, Edward S. *Economic Concentration and the Monopoly Problem*. Cambridge, Mass.: Harvard University Press, 1957. Pp. xvi, 411. $6.00.

Matz, Adolph and others. *Cost Accounting*. 2nd ed. Cincinnati, Ohio: South-Western Publishing Company, 1957. Pp. x, 838. $6.50.

Maynard, Harold H. and Davis, James H. *Sales Management*. New York: Ronald Press Company, 1957. Pp. vi, 666. $6.75.

Meade, James E. *Negotiations for Benelux: An Annotated Chronicle 1943–1956*. Princeton, N. J.: International Finance Section, Department of Economics and Sociology, Princeton University, 1957. Pp. 89. Paper, 25¢.

Meyer, F. V. *United Kingdom Trade with Europe*. London, England: Bowes & Bowes, 1957. Pp. 197. 21s.

Misra, B. R. *V for Vinoba: The Economics of the Bhoodan Movement*. London, England: Longmans, Green and Company, 1956. Pp. vii, 67.

Mossman, Frank H. and Morton, Newton. *Principles of Transportation*. New York: Ronald Press Company, 1957. Pp. xi, 510. $6.50.

Mulcahy, Richard E. (ed.). *Readings in Economics*. New York: Henry Holt and Company, 1957. Pp. vi, 154. Paper, $1.50.

Mylonas, George E. *Ancient Mycenae: The Capital City of Agamemnon*. Princeton, N. J.: Princeton University Press, 1957. Pp. ix, 201. $7.50.

Myrdal, Gunnar. *An International Economy: Problems and Prospects*. New York: Harper & Brothers, 1956. Pp. xi, 381. $6.50.

Neumark, S. Daniel. *Economic Influences on the South African Frontier: Economic Influences, 1652–1836*. Stanford, Calif.: Stanford University Press, 1957. Pp. xiii, 196. $5.00.

New England Governors' Textile Committee. *New England Textiles and the New England Economy*. Littauer 234, Cambridge 38, Mass. Pp. vii, 179.

Oster, Clinton V. *State Retail Sales Taxation*. Columbus, Ohio: Bureau of Business Research, College of Commerce and Administration, Ohio State University, 1957. Pp. xx, 241. $5.00.

Peach, W. Nelson and Rucker, George W. *Workbook in Economics*. Homewood, Ill.: Richard D. Irwin, 1957. Pp. vii, 218. Paper, $2.00.

Pounds, Norman J. G. and Spulber, Nicolas (eds.). *Resources and Planning in Eastern Europe*. Bloomington, Ind.: Indiana University Publications, Graduate School, 1957. Pp. x, 173. Paper, $2.50.

Report of the Committee on Economic Policy. *Debt: Public and Private*. Washington, D. C.: Economic Research Department, Chamber of Commerce of the United States, 1957. Pp. vi, 48. Paper, $1.00.

Roberts, George W. *The Population of Jamaica: An analysis of its structure and growth*. New York: Cambridge University Press, 1957. Pp. xxii, 356. $7.50.

Robson, R. *The Cotton Industry in Britain*. New York: St. Martin's Press, 1956. Pp. xvi, 363. Paper, $10.00.

Rosenbluth, Gideon. *Concentration in Canadian Manufacturing Industries*. Princeton, N. J.: Princeton University Press, 1957. Pp. xv, 152. $3.50.

Sherwood, J. F. and Niswonger, C. Rollin. *Income Tax Procedure*. Cincinnati, Ohio: South-Western Publishing Company, 1957. Pp. 224. $3.75.

Soth, Lauren. *Farm Trouble*. Princeton, N. J.: Princeton University Press, 1957. Pp. vii, 221. $3.75.

Spengler, Joseph J. and Duncan, Otis Dudley (eds.). *Demographic Analysis*. Glencoe, Ill.: Free Press, 1957. Pp. xiii, 819. $9.50.

Spriegel, William R. and others. *Elements of Supervision*. New York: John Wiley & Sons, 1957. Pp. xii, 349. $6.00.

Street, James H. *The New Revolution in the Cotton Economy: Mechanization and Its Consequences*. Chapel Hill, N. C.: University of North Carolina Press, 1957. Pp. xvi, 294. $5.00.

Sturmthal, Adolf. *Contemporary Collective Bargaining in Seven Countries*. Ithaca, N. Y.: Institute of International Industrial and Labor Relations, Cornell University, 1957. Pp. ix, 382. $4.50.

Sweetser, Albert G. *Financing Goods*. Newton Highlands, Mass.: Albert G. Sweetser, 1957. Pp. xiv, 609.

Taylor, Albion Guilford. *Labor and the Supreme Court*. Ann Arbor, Mich.: Braun-Brumfield, 1957. Pp. viii, 178. Paper, $2.00.

Taylor, Milton C. *Industrial Tax-Exemption in Puerto Rico*. Madison, Wis.: University of Wisconsin Press, 1957. Pp. xi, 172. $3.50.

Taylor, W. Bayard and Graner, Frank M. *An Outline to Accompany Financial Policies of Business Enterprise*. New York: Appleton-Century-Crofts, 1957. Pp. vii, 198. Paper, $2.50.

Turnbull, John G. and others. *Economic and Social Security: Public and Private Measures Against Economic Insecurity*. New York: Ronald Press Company, 1957. Pp. vii, 539. $6.00.

Tuttle, Alva M. *Elementary Business and Economic Statistics*. New York: McGraw-Hill Book Company, 1957. Pp. xiii, 663. $6.75.

United Nations. *Yearbook of International Trade Statistics 1955*. New York: Columbia University Press, 1956. Pp. 720. Paper, $7.00.

Weatherford, Willis D., Jr. *Geographic Differentials of Agricultural Wages in the United States*. Cambridge, Mass.: Harvard University Press, 1957. Pp. 99.

Weiler, E. T. and Martin, W. H. *The American Economic System: An Analytical Approach to Public Policy*. New York: Macmillan Company, 1957. Pp. xxv, 623. $6.00.

Wilson, Ruth Danenhower. *Here Is Haiti*. New York: Philosophical Library, 1957. Pp. 204. $3.50.

Winnick, Louis and Shilling, Ned. *American Housing and Its Use: The Demand for Shelter Space*. New York: John Wiley & Sons, 1957. Pp. xiv, 143. $5.50.

Wolf, Charles, Jr. *Economic Development and Mutual Security: Some Problems of U. S. Foreign Assistance Programs in Southeast Asia*. Santa Monica, Calif.: RAND Corporation, 1956. Pp. iii, 76.

SOUTHERN ECONOMIC ASSOCIATION